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Address.

THE PHYSICAL EXAMINATION AS A CIVIL SERVICE INSTRUMENT.*

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AN invitation to discuss in this national convention a subject of no little importance to Civil Service, is an honor highly appreciated by a member of the medical profession. The seeming simplicity of this problem of physical examination has given rise to the mistaken idea, even among those of my own profession, that either there is very little to be said about it, or that everything which can be said has already been well and finally expressed. Since simplicity, however, is so often the superlative of complexity, let us test the verity of the paradox by submitting this topic to a more philosophical discussion than it has yet provoked in the forum of this assembly.

I am not altogether imaginative when I remind you that before the days of the modern

Civil Service Commission, the only Civil Service law was the law of physical diagnosis, and the only Civil Service Commissioner, the physical examiner, on whose knowledge, good judgment, honesty, and civic perception depended the physical excellence or inferiority of the personnel of many of our police and fire organizations. That this quasi-civil service law was indifferently administered is now a matter of history. Its administrator, however, was no more blamable than many other excellent citizens whose reason, bewitched by the seductive euphony of a slogan more specious and more ancient than autocracy, scorned the prosaic logic that links a victim with the spoils and the victor. If I may paraphrase a line from Cassius in *Julius Caesar*, the fault was not in their stars, but in their own civic color-blindness, that they were underlings.

In proof of this, there is abundant evidence, classical as well as conclusive. I refer to the sketches of that old-time cartoonist who waxed fat on a dull-witted public, by depicting with monotonous regularity the physical and mental obesity of a grotesque, club-swinging figure dressed in the uniform of a policeman. Happily there were those who refused to laugh at a joke which was all on themselves and at the expense of the sacred ideals of their fathers.

* Read at Milwaukee, Wis., June 21, 1918.

These were your forebears, in whose memory we are here gathered and whose coming marked the passing of that old cartoonist. Therefore if I seem to be impertinent in reminding you of your kinship with the doctor and the jokester, it is only because I feel that the failure of the former is entirely mitigated by the splendid tribute paid to you by the latter, when, like Swift,

"He showed by one satiric touch,
No nation wanted you so much."

Twelve years of labor in the field of Civil Service would represent much time ill-spent if, early in my career, I did not recognize the fallacy of the clinical attitude of mind of my profession which classifies those departments of government that enlist medical service as mere dependencies of the empire of medicine. Justly impatient with the foolhardiness of this fallacy, men with civic vision raised the science of public health to a dignity and efficiency which it never knew under the old feudal system of its clinical ancestor. I point the moral not only to adorn the tale, but also to serve notice that in the exposition of this subject, I fully realize that I am a medical passenger riding on a branch of the main governmental line. To complete the metaphor, let me add that I was shunted in from a siding. In other words, in the field of Civil Service, a physical examiner performs a medical function subordinate to the function of the government, and not a governmental function subordinate to the function of medicine. Hence in this discussion, I shall endeavor to forget that I am a student of medicine, and shall try to think with the more logical mind of a student of government. Like Virgil, singing of arms and the man, I intend no harangue anatomic.

At the outset, the purpose of the physical examination must be clearly understood. To understand this purpose, it is essential that we appreciate in a broad way, at least, not only the ideals which direct every purpose of Civil Service, but also those which direct every purpose and function of true democratic government. Briefly, true democracy means these three things: first, equal opportunity for all; second, special privilege to none; and third, the utilization of superior ability. The first two desiderata recognize the moral function of government. The third emphasizes the vital importance of the economic function, but it

points particularly to the indispensability of the strongest possible leadership, without which the moral and economic functions cannot be co-ordinated, or maintained inseparable and inviolable. Autoeracy, interested only in the materialistic philosophy of economics, demands for her very existence the utilization of superior ability; but she differs from democracy in that she substitutes steel and high explosives for the moral force which distinguishes what Mr. Ralph Adams Cram calls "the democracy of ideal." While democracy is loath to admit that complete moral paralysis is the price of economic success, she has not demonstrated that moral cretinism or ethical anaemia can achieve anything more than economic mediocrity. Under the baneful influence of the alien efficiency expert, less efficient, less expert, and less human than a cash register; and under the coarse and bogus leadership of the economic juggler lacking the honesty, the accuracy, and even the soul of an adding machine, democracy has seen stricken from her budget the modest salary of her sealer of moral weights and moral measures.

These three distinguishing marks of democracy are also the three distinguishing marks of Civil Service. Primarily, you are champions of the moral function of government; but since the integrity of democracy demands that the economic and the moral functions be indissoluble, you cannot avoid challenging the former when it runs amuck in your section of the moral domain. Representing therefore the potential energy of inseparable righteousness and efficiency in government, you are more than an employment bureau. Milton did not mean you when he said, "They also serve who only stand and wait." Yours is a condition of activity within, and not of inertia without, the gates of government. You can fail only if your conception of efficiency means thralldom to the bloodless and pitiless rule of economics.

The physical examination, therefore, like other instruments in your technic of selection, is concerned fundamentally in assisting you to solve the complex problem of efficiency presented by the many difficulties which beset your determined purpose to have the public service enjoy the benefits that can come only from the utilization of superior ability. While from a purely Civil Service point of view, physical excellence is de-

manded as a pledge of present and future usefulness, the physical examination, nevertheless, expresses many other ideas which cannot be ignored by Civil Service Commissions who would be progressive. More than any other governmental activity you have been influenced, consciously or unconsciously, by the legislation which has enabled our public health boards to achieve such beneficent results, and also by those ideas expressed in such creations of modern social legislation as the industrial accident board, the board of labor and industry, and the minimum wage commission. With all these you must discover your points of contact, for underlying them are principles which you must recognize and support, if you would maintain a high degree of efficiency for yourselves, as well as for those governmental departments within your jurisdiction.

To the influence of this modern social legislation, I can only briefly refer, but that you may understand my meaning, let me ask you if I am any less a Civil Service man, if I keep out of the public service a communicable disease, such as tuberculosis or syphilis, or refuse to pass a man who has never been vaccinated against smallpox, until he has been successfully vaccinated? Or am I any less your representative, if I refuse to pass for a dangerous job an applicant with a physical defect which may contribute to the unnecessary maiming or killing of his fellow workmen? It is true that these injured men will be compensated, if they are protected under the Workmen's Compensation Act; but the justice of that act will in the long run be more far-reaching, and the compensation of the injured and of the families of the dead more adequate, than at present, if all possible means are taken to prevent accident. If industry is to shoulder the burden of accident, by adding its cost to the cost of production, we must do our part to reduce that burden, so that in the end the workers and their families and the nation at large will enjoy those happier social and financial conditions that will obtain when accidents are reduced to a minimum.

In the first case, I am exercising a function of preventive medicine to protect the public health; and in the second case, I am contributing medical service to the prevention of accident, in order to advance the cause of social justice. I am, however, contributing also in

your name to the efficiency of government, which is in both cases potentially threatened. Incidentally, let me ask you also if an anti-vaccinationist, or the Civil Service reformer whose social myopia or astigmatism is still unrefracted, can visualize the countless governmental ramifications that make the modern Civil Service problem, for the amateur or the faddist, a hopeless soliloquy, in which he reveals a pitiful hesitancy which even dwarfs the classical irresolution of the melancholy Dane.

Here let us not forget also that efficiency connotes mental as well as physical superiority. To a greater or less extent, it means a combination of the mental and the physical, in proportions varying according to the demands of different occupations. Psychologically, the idea of the purely physical, as it relates to the human being, is associated in the popular mind with the ideas of strength and beauty, and their opposites. We forget that other physical quality which contributes to the creation or the expression of the useful as well as the beautiful. That quality is skill—the skill of the hand, which dignifies the arts and crafts and trades, and which in the history of man, in his struggle towards civilization, long preceded his escape from intellectual oblivion. Indeed it made possible that escape. Usually the endowment of a finely co-ordinated nervous system, and of a mind more or less richly imaginative, as often as not a stranger to great mental capacity, and occasionally having for its handmaids physical weakness and physical deformity, skill remains a quality of intrinsic value.

Hence in the psychology of the Civil Service mind, the idea of physical skill must be substituted for the idea of physical beauty, at least until such a time as we shall be drafted as judges of the increasingly popular modern beauty contest. At present we must be neutral, sensibly avoiding, however, a condition of armed neutrality, which might tempt beauty to prove at our expense that no man can be adamant to her charm. I cannot help thinking that the importance of physical skill will become more and more apparent as we awake to the seriousness of the inevitable problem which our country will be called upon to solve for the social and financial uplift of her soldiers who are crippled in this present war. In

the presence of this quality of physical skill, the physical examination seems to me to be a piece of glass arrogantly attempting to scratch a diamond, the value of which is enhanced rather than diminished by a crude or unattractive setting.

Moreover, inasmuch as a poor physical equipment lacks the necessary recuperative power against the physiological fatigue peculiar to certain occupations—a fatigue which is mental and nervous as well as physical—the physical examination transcends the idea of mere physical efficiency. Herein lies another danger. Let me warn you therefore against giving to this test too exalted a position in the hierarchy of your requirements. If you would hold steadfast to your purpose of utilizing superior ability, you must avoid the ever present temptation to sacrifice on the one hand, mind to matter, and on the other hand, matter to mind. Early in your history, in the case of applicants for police and fire service, the sacrifice of the physical to the mental was quickly recognized and properly remedied. Obviously, as a qualification for admission to these branches of the service, physical strength is of paramount importance. With only a medical examination, it is impossible to rate these applicants on the basis of strength, speed, and agility.

Originally, their mental capacities, as indicated by their marks on the written examination, determined their order on the list of eligibles. Thus many who were physically sound, but inferior in physical strength, enjoyed a special privilege on account of a high mental mark. Realizing that this inconsistency nullified not only your second purpose, to allow special privilege to none, but also your third and ultimate purpose to utilize superior ability, you perfected your technic of physical selection in the case of these applicants, by adding the strength test, in order that they may rise or fall to more equitable positions on the list. I heartily agree to the soundness of the judgment which would give to the strength test mark a greater weight than is given to the mental mark.

In the broader field, in which lie those positions for which physical skill or mental attainment is the criterion of fitness, your physical examiner often feels as an aviator must feel when he is sailing the heavens without a com-

pass after dark. In the presence of communicable disease, it is easy to make a decision, but more often than not the examining physician needs the assistance of his superiors, who must be constantly on guard to prevent this valuable but not unerring instrument of efficiency from contributing to their own inefficiency, as well as to the inefficiency of the public service. If the physical examination is allowed to defeat the ideals on which rests the touchstone of your usefulness, the fault is in you and not in the physical examination.

In order to emphasize further the efficiency aspect of the physical examination, I wish to unsettle an idea which exists not only in the minds of many applicants, but also in the minds of not a few students of Civil Service. The reasonableness of examining physically applicants for police and fire service, everyone admits; but there are few who seem to understand clearly the reason for the physical examination of applicants for unpensioned positions. The confusion arises from inferring a relationship between the pension system and the physical examination which does not exist. The physical examination was applied to police and fire applicants before their pension system was established. It is being applied to them today where no pension system exists. It would be applied tomorrow if every pension system were abolished. Even maximum age limits were established before pension systems were created. From your standpoint, minimum and maximum age requirements are efficiency precautions, the origin of which is explained by your third desideratum, the utilization of superior ability. The pension system (I am of course not referring to the compulsory contributory form) represents a gratuitous reward for service performed, regardless of its quality; the physical examination represents the promissory note demanded as a pledge of efficient service to be performed. The pension system represents altruism; the physical examination represents justice, and justice though merciful is not altruistic. The pension system is the clearing house for the inevitable inefficiency of age; the physical examination personifies the director of the mint from which is issued the new currency of the attractive and desirable efficiency of youth. You stand for the efficiency of the applicant, whether he seeks a pensioned or an unpensioned position.

I have dwelt at length upon this phase of the subject, because, having an almost personal relation with the applicants, I have learned that much of the hostility to Civil Service is due to misunderstanding and doubt which could be easily dispelled by the creation of the proper machinery on your part. The employees of other governmental departments, besides being familiar with office technic, know much about the purpose of their department and its practical relation to government. Civil Service, however, having a distinctly philosophical relation to government, as well as a very practical relation, is more difficult to comprehend in its entirety. It is more than rules and regulations and office technic. In other departments, the employee is quietly asked by the citizen, "What is the rule or the law?" The employee in the offices of the Civil Service Commission is often asked in a tone that is anything but meek, "Why is this rule or this law?" In the first case, the citizen wants to be sure that he isn't breaking the law; in the second case, he wants to be equally certain that the law isn't breaking him. In the first case, he bows to the time-honored majesty of the law; in the second case, he sees no reason why that venerable aristocrat shouldn't bow to the long-neglected majesty of the individual.

It ought to be just as easy to teach those who look upon Civil Service as an impregnable barricade intended to discourage worthy ambition to see in it a rock of safety for those who are proficient. In the title of this paper, I have used the word instrument because I am so often obliged to explain that the physical examination is not a weapon, and that I am not an armed soldier on guard before a besieged citadel, but a peaceful umpire of a manly sport, in which the loser must shake the hand of the winner. I often tell the applicants, in the vernacular of the athletic world, that they have entered an "open meet" in which there are no handicap events. The establishment by every Commission of a department of information, in charge of someone who is more than an office technician, would do much to enlighten the applicants and create among them and their friends a more reasonable attitude towards Civil Service. If your introduction to the public were through such an agency, you would be spared the needless irritation of many petty problems, and your physical examiner would

not find it necessary to explain that he is not advancing the cause of positive eugenics, and that the physical examination is not intended as an indignity.

From what I have said so far concerning its purpose, it is apparent that the physical examination, like the written, must be responsive to the various demands of different occupations or positions; for unless an instrument be skillfully and wisely used, a knowledge of its purpose availeth little. A test of physical fitness divides the applicants into two distinct classes, one which includes police and fire applicants, and the other which includes the applicants for all other positions. In the case of the former, the problem resolves itself into first eliminating the physically unsound by the so-called medical examination, and then by means of the strength test, further eliminating from those physically sound those who are physically weak. Furthermore, the strength test performs another function, for it rates on a percentage basis the speed, strength, and agility of these applicants according to their respective merits. I believe that it also has a moral effect, because since it is the real barrier to the job, it is a silent means of stimulating the serious applicant to develop his speed, strength, and agility, not only because he wants the job, but also because of that inherent human trait which makes men in competition anxious to excel in order that they may also win the respect of their competitors. The man who has altogether neglected his physical development, or has allowed himself to become soft through laziness or dissipation, suffers a blow to his pride which either eliminates him forever, or fills him with a grim determination to develop his latent strength, so that in some future examination he may win back his lost prestige and regain the esteem of his friends. Police and fire applicants have nothing but contempt for the competitor who isn't there physically. This is probably the reason why you seldom get a complaint from a strength test failure, although complaints from failures on the written examination are common. And the explanation is this. Few are unwise enough to be arrogant over their physical strength, especially if their measure has been taken; while on the other hand, fewer still are wise enough to be modest concerning their mental capacity, even if that capacity can be measured as accurately as the few scattered hairs on the top of a bald head can be numbered.

I regard the strength test as one of the most valuable assets of Civil Service. Up to 1906, when I assumed my present position, it was applied to the police and fire applicants of only about six or seven Massachusetts cities. In that year, the Massachusetts Commission extended this test to all the other cities in the state and to those fifty or more towns which had voted to place their fire and police organizations under Civil Service. The physical material of those cities where the test was originally applied is all that can be desired, for the strength test, by giving an opportunity to each succeeding class of applicants to equal previous records or establish new ones, has created a physical "noblesse oblige" for those entering these services. In the other cities, the same benefits are already apparent, for the material has improved to such an extent that the strength test exhibitions of my early years stand out as burlesques of those of the present day. This test has eliminated the flabby-muscled applicant who in those days supplied amusement for the gallery, and it has made the careless young fellow realize that the gymnasium, and not the street corner or the pool room, is the evening rendezvous of those who get the job.

On account of the war, the former abundance and excellence of police and fire material has been replaced by scarcity and mediocrity. In the absence of excellence, however, mediocrity is preferable to worthless inferiority, but the temptation will be to relieve the scarcity by substituting the latter for the former. I believe that this war condition can be met without sacrificing one single principle of Civil Service. If you have neither the technic nor the ability to meet an emergency, then you deserve to be ignored.

You would not have any patience with the physician who allowed a man to bleed to death for want of a tourniquet while he went off to get a sterile dressing. Let us grasp this first aid idea expressed by the tourniquet. If an appointing official can get a man for a job, so can you; and even if he cannot get one you can get one for him. The real test is always to find Garcia; the easiest part is to deliver the message. This war has put it up to you to find Garcia.

Now the only elements to be considered in any scheme of physical selection are soundness of body, speed, strength, and agility. These are altogether lost sight of by the critic who

says that our examination does not test those heroic qualities with which certain men think themselves exclusively endowed. It is not intended to do this any more than its function is to eliminate the lazy and the impudent, and I don't know any system of physical selection that can do so. Police and fire departments want not heroes, but efficient workers. The applicants themselves have no romantic ideas about the positions which they are seeking. To them it is a job better than the one which they have. A consumptive or a weakling may qualify as a hero, but not as a fireman or a policeman. I have talked with more than fifteen thousand of these police and fire applicants during my years in Civil Service, and I have yet to find one who wants to be a fireman because he thinks that he has inherited, in the language of the old hand-tub fire-fighter, the ability to "eat smoke," or a policeman, because he thinks that Heaven ordained him to be a sleuth. When asked why he wants the job, his answer is always the same; that he needs it, not only this year when he fails to get it, but next year and the next, when he tries for it again.

Health, strength, speed, agility, and intelligence, therefore, are the only standards by which they can be fairly or accurately measured. These are the acid tests to which their real differences respond. Height, weight, and age, limited as they are by our minimum and maximum figures, express differences so slight as to be almost negligible, when they are counterbalanced by the strength test. I have but little patience with boards of laymen who, knowing nothing about physical qualifications, will haggle over the question of age, height, and weight, as if they were the only things worth considering. The technic of Civil Service selection will take care of all this by a test which has more respect for physical power than for physical pulchritude. That test is founded on some self-evident truths. A good big man is better than a good small man; a poor small man is at least no worse than a poor big man; indeed he may be better, because the big man by actual weight represents more physical uselessness. That a good small man is better than a poor big man is then too evident to need any further explanation. The same is true of age. A young man ought to be a better man physically than one who is some years older. If in certain cases, it can be proved that this is not always true, the test that proves it ought to

merit some consideration. To sacrifice to height, weight, or age, superiority in health, strength, speed and agility, even though this superiority represents only mediocrity, is a big mistake.

There is a vast difference between the man who fails on the strength test and the man who just gets a pass mark. It is the difference between bad and good. There is also a big difference between the man who gets only 70% or 75% and the man who gets 85% or more; but it is the difference between better and best. So far as height is concerned, the advantage is more often than not on the side of him who lacks an inch or two of the other fellow. Weight is a more valuable asset than height, for usually, other things being equal, the superiority is with the heavier man, provided his weight is not due to obesity. As for age, as long as you apply the strength test, it makes little difference whether your maximum age is forty or thirty-three. A man is not necessarily more decadent physically at thirty-eight or forty than at thirty-three. The important fact is that at thirty-three, he makes a sorry comparison with his younger brother of twenty-five. Therefore when you hear a friend of forty boast that he is as young as he ever was, find out whether he means thirty-three or twenty-five. If he means the former, don't argue the case, for he is probably right, and normal and happy besides. But if you have a friend of forty who tells you that he is as young as at twenty-five, advise him to have his blood-pressure looked into, for he is probably beginning to feel that initial exhilaration which comes with a rising blood-pressure. I have a wholesome respect for the man over thirty who passes the strength test, for he proves that he is not only worthy of his hire, but also that the decade between thirty and forty is not a period of true physical decadence.

The efficiency of the service will be but little impaired and the number of applicants appreciably increased during the war period, by keeping the weight as it is, by lowering the minimum height at least one half inch, and by raising the maximum age by at least five years. The strength test will decide the age question, for, as I have said before, a man who can pass this test is able to satisfy the demands of a reasonable standard of efficiency. The minimum police heights are intended primarily to standardize the size of the men in the various

police departments. That there is good reason for this, I do not deny, but I do maintain that as far as appearance goes, there is no appreciable difference between the man five feet seven and a half inches, and the man five feet eight inches, or between the man five feet six and a half inches and the man five feet seven inches, provided their weights are the same. It has always been my feeling that a man no more than half an inch below the required minimum height should be placed on the list of eligibles, if he obtains a mark of 85% or over on the strength test. He is giving a *quid pro quo*, but the public service is the winner in the exchange, for the *quid* is so much more valuable than the *quo*.

Fire departments, especially, have paid the toll of physical inferiority to the nemesis of height. Wrongfully assuming that the establishment of a minimum height for fire applicants, one inch under, or equal to, the minimum for police applicants, would secure the police type of man for their department, fire department heads have been responsible for the knock-out blow administered to much excellent physical material by the measuring-rod, the only tool in the kit of the physical examiner which is dedicated to the ornamental aspect of the Civil Service applicant. To those department heads who, on account of a lack of imagination, are not practical enough to allow Civil Service to give them physical material which is useful rather than ornamental, I recommend these lines from Bobby Burns, in which the word height is substituted for the word "rank"

"The height is but the guinea's stamp.
The man's the gowd (gold) for a' that."

On several occasions, I have been told by Fire Department officials that there must be something wrong with our method of physical selection, since it does not supply to their service the same type of man which it supplies to the police departments. The fallacy of this statement consists in assuming that Civil Service Commissions can create physical material. Obviously, they can send to these departments of the public service only the best of the physical material which does apply, and that they do so is beyond dispute. I want to emphasize that statement, because there is no more tangible proof of your efficiency than the general physical excellence of those police and fire de-

partments in the selection of whose members you have been unhampered. As I have said before, the moral effect of the strength test is apparent in the pride which many of these men take in keeping themselves physically fit long after they have passed the rugged period of youth. I know of a fire department for which the only physical requirement (a requirement established by the state legislature and not by Civil Service) is a minimum height of five feet five inches. There is no minimum weight; and if it were not for the Civil Service strength test, there would be no protection for this department against an invasion of human paper weights. If another fire department establishes a minimum height, weight, and age, identical with the same minimum requirements for the police force of the same city, the Civil Service Commission is not responsible, if, on account of the lack of applicants meeting those requirements, it becomes impossible to maintain an eligible list from which that department can be recruited.

In Massachusetts, men of police size are seldom found among fire applicants. As a rule, when you do find them, it is because they have not yet reached the minimum police age, which in some cities is several years above the minimum fire age. Hence many men of police size avail themselves of the opportunity to mark time in the fire department, until they reach the minimum police age. In looking over my records, I find that in twelve years in the whole State of Massachusetts, only twenty-eight police applicants were also applicants for the fire service; and in all but two cases, these applicants resided in the same city. In every case their preference was the police service, but in nearly every case, the strength test record indicated only inferiority or mediocrity. In other words, it has been our experience in Massachusetts that those who apply for police service do not want positions in the fire department. Police candidates are more numerous, bigger, and altogether physically better than fire applicants. Among police applicants I frequently see those who are already serving as firemen; but I cannot recall one single instance when there has been a policeman among any group of fire candidates whom I have ever examined. Moreover, the many excellent police applicants who year after year just miss an appointment never compete for positions in the fire service, which in many cases they could

easily snatch from those who otherwise get them. A change to the two platoon system might tend to popularize the fire service, and thus make it more attractive than it seems to be at the present time.

The minimum height and weight of fire applicants must be established with the idea of maintaining an area of selection large enough to meet the demands of the service. When the minimum police size is five feet eight inches and one hundred and forty pounds, the area of fire selection is only one inch wide, if the size requirement for this service is fixed at five feet seven inches, and one hundred and forty pounds. Of course if the minimum fire age is below the minimum police age, there is a larger area from which to select the applicants, but in my opinion, the advantage of this is nullified by a ridiculous and inexcusable condition which forces the fire service to be a training school for many future policemen. For the police and the fire service, there should be the same minimum age; and the minimum size requirement of the fire applicant should be at least two inches and ten pounds below the minimum size requirement for the police applicant.

Thus if you require five feet eight inches and one hundred and forty pounds for a policeman, you ought to require for a fireman, five feet six inches and a hundred and thirty pounds; and when the police requirement is five feet seven inches and one hundred and thirty-five pounds, the fire requirement will be five feet five inches and one hundred and twenty-five pounds. Some will object on the ground that this man five feet five inches and one hundred and twenty-five pounds is too small; but to them I shall only reply that it was about this man and not about the female of the species that it was originally said, "Good things come in small packages." He represents a type broad of shoulder and deep of chest, with muscles well developed for speed, strength, and agility. These are a few ideas concerning the physical examination in its most satisfactory phase, for in its application to police and fire candidates, it is decidedly a satisfactory instrument of efficiency.

Its success is not in any supernatural quality with which it is endowed, but rather in its consistent and unfailing reaction to every test of those three ideals which democracy represents, and to which your every effort is dedicated. You

will not, I know, think me boastful of the state which I have the honor to represent, if here in this national convention, I pay a tardy tribute to that Massachusetts Commission of thirty years ago, who first saw the necessity of applying this system of physical selection to police and fire applicants. In paying this tardy tribute, it is only proper to mention that Commission of 1906, to whose vision and energy was due the universal application of this test to the police and fire applicants of the Commonwealth, and the extension of the physical examination to include everyone but clerks and stenographers. I am innocent of any thought of self-praise, when I say that it is a pleasure for me to whom they entrusted this task to tell them that it has accomplished all that they hoped for.

It seems to me that we subordinates would render a better account of our stewardship to you gentlemen who are directly responsible to the people for the wise administration of Civil Service, if, in addition to our yearly report, which is merely the dry measure of the quantity of work done, we would also give you some idea of its Civil Service quality, by subjecting it to the test of those three desiderata on which depends the success or failure of every Civil Service activity. My long experience with one of the oldest instruments, and in my judgment the most satisfactory, in the technic of Civil Service selection, has made me look upon the pioneers in this work as men who hold in government the place which Pasteur holds in medicine. He it was who taught us that the ideal treatment of disease is its prevention. Likewise those pioneers made us realize that prevention is the only cure for corrupt government. They were more than mere prescription writers. And just as Alfred Hayes has rightfully and beautifully called the Pasteur Institute at Paris, the Arsenal of Life, so may we, catching the spirit of the tribute, call the institution of Civil Service, which they founded, the Arsenal of Good Government.

When you go out of this field into the larger field, where the efficiency of the individual is not so easily determined by the physical examination, "Hills peep o'er hills, and Alps on Alps arise." The technic of the so-called medical examination does not lend itself readily to a system of percentage marking. Such systems exist, I know, but I trust that I may be pardoned for the hyperbole, when I say that

the only interest which they have for me is the amusement which I get from attempting to figure out a pass mark for a decapitated, armless, and legless individual. I am willing to be convinced that I am wrong in my belief that if a physical defect is sufficient cause for a percentage reduction, it is sufficient cause for an absolute rejection. I know that I am right when I reject a telephone operator who is deaf; but I think that my Commission ought to reject me if I am responsible for staging a hearing, at which an applicant for the same position asks to be enlightened as to the relation between a pronated ankle and operating a switch-board. I know also that I am right, if I reject a stenographer who is tuberculous; but I am not competent to judge the ability of an applicant for the same position who has only one arm. It is more than possible that the efficiency of such an individual may make the supposed efficiency of a normal individual look like gross inefficiency.

Promotion physical examinations, especially fire and police promotions, are still waiting for the last word. To make promotions in these departments depend too much on physical standards, to a certain extent puts a premium on cowardice. Men will avoid danger as well as dissipation, if too high a physical standard is applied to them after years of service. They cannot help showing the wear and tear of time, and high blood pressure, heart lesions, hernia, varicose veins, flat-foot, and defective vision are to be expected. In Massachusetts, applicants for police and fire promotion are examined and their physical condition is submitted to the appointing official. The Civil Service Commission reserves the right to reject in such cases as chronic alcoholism, locomotor ataxia, or other serious disease of the nervous system, excessively high blood-pressure and several other conditions. The fact which I wish to emphasize is that we have established no arbitrary physical standard, preferring instead to consider each case on its merits. At present, I am opposed to arbitrary physical standards, because, in this broader field of service, we have not yet carefully studied the physical demands of various occupations, or learned to strike a proper balance between the physical, and the mental and moral. In the case of superior officers, whether of the fire and police or other services, physical superiority is not always a

satisfactory substitute for mental and moral excellence.

There is another matter which deserves our attention. It concerns the war cripple. In the words of the editor of *Collier's*, Mr. Mark Sullivan, "We have not yet come to dread the day that brings the week's casualty list, nor learned to cover with silence the fresh draft on our fortitude. Our wounded have not come limping back to our doorsteps." This war is going to test our ability to visualize many new governmental activities. One of these will be the reëducation and reconstruction of the war cripple. We are at the beginning of an age in which the cripple is going to move up and not down. He will not have to ask for charity, for he will be made efficient; so efficient in some cases that he will set the standard for the normal individual. For this reason, his case will demand an answer from Civil Service. To wait until the question is asked, and then to point carelessly to the physical examination as the only answer, will be a confession of our own unpreparedness, a disparagement of the dignity of others, and an arrogant glorification of ourselves. What the answer will be, no one can predict, for it is a problem pregnant with perplexity. Its solution demands, on the one hand, an intimate knowledge of the methods and results of this system of re-education, and on the other hand, an equally intimate knowledge of the physical, mental, and moral requirements, and the social exigencies of the many occupations in which workers, skilled and unskilled, assist in the business of government. Practical examinations to test the efficiency of applicants for positions in which skill and special training are essential must be speeded on their journey towards perfection; for in this broader field, the physical examination cannot reach its acme of usefulness until a practical test of efficiency gives to it that confidence and degree of accuracy which it owes to the strength test in the selection of police and fire applicants. This field of skilled and unskilled labor would still be an unexplored jungle if it were not for the work of a few Commissions whose wisdom in developing the practical efficiency test has written one of the most important chapters in the history of Civil Service. Here it is that we must be responsive to the demands of our modern social legislation. A general knowledge of the dangers and diseases of various occupations; a knowledge of safety pre-

cautions, human and mechanical; a knowledge of sanitation, of hygiene, and of the physiological fatigue to which every worker is exposed—must be added to the intellectual equipment of those students of democratic government who would escape intellectual stagnation.

I maintain that the true test of the efficiency of a Civil Service Commission is not the successful filling of a few five thousand dollar positions, but rather the more difficult task of filling with consistent success the five thousand or ten thousand \$900 or \$1200 positions at the bottom of the service. In the former case, yours is the easier part of delivering the message. The credit of finding Garcia belongs to the special examiners. In the latter case, the glory is all yours, and the joy no man can take from you. There at the bottom of the service, at its very foundation, building here, tearing down there, Civil Service is engaged in a trying task that will always be unfinished. In this work at the bottom of the service, the value of the physical examination will ultimately depend on our knowledge of the gross and microscopic anatomy and pathology of democratic government. A treatise on the pathology of democratic government might well be called "The Modern Anatomy of Melancholy."

Let me warn you against establishing an unreasonably high standard of vision for certain high grade positions. When the efficiency of the employee is dependent on his special knowledge rather than on his physical perfection, there is no reason for rejecting him if his visual defect is corrected by glasses. Men have eyes but see not, and ears, but hear not. We must distinguish between mental and ocular vision. This suggests the necessity of a psychological test of the applicant's powers of concentration and observation by the examining department. It is beyond the scope of the physical examination.

I cannot leave this subject without saying a word on the question of using the physical examination as a coarse sieve to accomplish a preliminary elimination of the applicants. If this is done to speed up the work of a Commission it is right and proper, provided that the physical examiner is not pushed beyond the possibility of doing efficient work. But if it is done to save the salaries of a few clerks, at the expense of careful work on the part of the physical examiner, it is inexcusable. There are few occupations more fatiguing than physical ex-

aming. There is no other instrument of Civil Service so likely to upset the square deal, because it is potential with as much injustice to the applicants as to the public service. It demands on the part of the examiner a sound knowledge of physical diagnosis which can be acquired only by a preparation and special training second to none engaged in the work of Civil Service. No man who brings to this work the training commensurate with its importance, and the proper respect for the high ideals of his profession, will ever dishonor Civil Service. You have no right by practising a "chill penury which represses noble (toil)" to make it impossible for him to give to the people that high grade of service which can redound to your credit only if it is not obliged to blush for shame when scrutinized by the keen, far-seeing eyes of Aesculapius. Physical examiners must not be purchased at the bargain counter. With the advent of the Civil Service bargain, the mark-down square deal must be displayed in the window, and between them the old spoils system will be called back into a blissful earthly life everlasting, in which there will be no communion of saints or resurrection of the corpse of Civil Service.

The distinctive feature of the physical examination, which calls for the greatest tact on your part, is that it suggests to the individual an interference with his personal freedom on the part of the State, and an invasion of his personal privacy. In fact this is true of no other instrument in your technic of selection. In recent years, the individual has been bewildered by many complex schemes of social reform, all demanding recognition as social justice. Many of these were imported from another country where they abetted the brutal frenzy of an atheistic travesty on economic science, in perfecting a vast, intricate system of efficiency—the worst that man could possibly devise—applied to the worst industrial system that the world has ever known. Into the midst of this whirlpool of social panaceas, the medical profession has been drawn, and it is only natural that the individual will be suspicious of any exercise by the State of a medical function which seems to invade his personal privacy. I bring this to your attention, because it explains the vital importance of understanding the purpose of this instrument in order that it may be used wisely.

After all, the big outstanding fact concerning the more extended use of this instrument by Civil Service is that it commits us to the responsibility, which cannot be shirked, of supporting by intelligent action, the social, as well as the political, civil, and economic basis of this government. To Civil Service, this should present no difficulty, for both social justice and practical Civil Service Reform represent the moral function of government. Indeed Civil Service is in many respects a piece of social justice. Unfortunately, many of our attempted so-called social reforms are at variance with the moral principles of democratic government, for in the words of Mr. G. K. Chesterton, "they lead to the servile state," "they mean the empire of the slum."

Members of the Assembly, I have tried to the best of my ability to prepare this subject for a discussion which will not be profitless. I hope that I have at least shown that this old member of your family is still warm-blooded enough to wag the tongue of gossip. The time for discussing the advisability of extending the physical examination has already passed. Grave social and national problems, the solution of which will "stretch to aching the pia mater" of the strongest leadership that Democracy can muster, are today constantly reminding the thoughtful administrator of Civil Service that he must not be a pigmy where those old pioneers were giants. The segregation and prevention and reduction of disease, the reduction and prevention of unnecessary accidents and deaths, the reduction of long hours of labor, the forbidding of the exploitation of children for commercial gain—in expressing the importance of health and the dignity of human life, express the concrete idea that old Demos recognizes that his efficiency is dependent on the health and happiness and intelligence of his citizens. But it also expresses that most important idea, too often forgotten in a democracy, that each citizen owes in return to the government from which with millions of others he has voluntarily accepted a partnership for which he has been a suppliant, that loyalty, and that obedience to authority, which we call discipline, and without which organized effort is fruitless. That old geometry theorem, with which we struggled in our school-days, that the whole is greater than any of its parts, would have meant more to all of us had it been

taught by the teacher of civics as a fundamental truth of democratic government.

The home rule hallucination of cities and towns; the *l'état c'est moi* delusion of county politics; the outworn doctrine of state rights, so convenient as a subterfuge for perpetrating national wrong; the childishness of sectional, and other jealousies no less unworthy; the *laissez-faire* patriotism of many who ought to know better and do; the freedom of the press, freedom of speech, the freedom of the individual, in which freedom at times undergoes a metamorphosis that results in a three-headed monster with heads turned backward, and eyes that can look only down—these are witnesses, deaf perhaps but not dumb, who bear unwilling testimony to the discouraging task of cultivating a national discipline in an "unweeded garden grown to seed. Things rank and gross (in democracy) possess it merely." Who is doing more than you to rid this garden of the weeds which choke the healthy growth of discipline and efficiency?

Among the employees of government, lies a wonderful opportunity. If you require a certain physical standard as a pledge of efficient service, you must go into the service and see that that standard is not lowered by conditions which should not exist—and I include conditions for which the employee himself is responsible. If you demand an economic return, you must be willing to pay for it in moral values. There must be a minimum wage, for wages are no longer determined by the law of supply and demand, but by a standard of living which defies the old economic law. You must eliminate the physiological fatigue which accompanies excessive hours of labor, especially in dangerous occupations, and you must see that every employee can hope for an ultimate wage that will enable him and his family to live decently. In return, you have a God-given right to demand a high grade of service and a spirit which is amenable to discipline. In such an atmosphere, the incompetent, the insubordinate, and the shirker will find no sympathy. In order to succeed, you must be inspired by those three ideals of democracy, ever boldly challenging that intellectualized materialism which measures human efficiency only by the soulless laws of physics and economics; and just as boldly challenging also that other materialism, less intellectualized perhaps, but

equally dangerous, which would change this government into a tyranny of the few over the many, or the no less endurable tyranny of the many over the few.

If you would enjoy the most perfect fulfillment of your desire to give to this government that efficiency which goes with discipline and the utilization of superior ability, you must constantly cultivate it, conserve it, and advance it, mentally, morally, physically, and socially. My old predecessor didn't even cultivate it physically, and he fell the victim of a jokester. I cannot help thinking that that old cartoonist is still hovering about ready to prove himself to be the same old David, unless we keep our heads high and our faces towards the dawn.

Original Articles.

STUDIES IN PERSONALITY AMONG FEEBLE-MINDED DELINQUENTS SEEN IN COURT.*

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WE shall not attempt on this occasion to discuss the seriousness and extent of the feeble-minded problem. We have all of us either presented or had presented to us much of the ascertainable data along these lines. But we do wish to call your especial attention to certain aspects of feeble-mindedness that have been inadequately touched upon.

In the first place, we need to know more about an individual than the mere fact that he is feeble-minded. For we have come to realize that feeble-mindedness does not necessarily imply bad social adjustment. We are told by no less authorities than Dr. Walter Fernald and Dr. George Wallace that certain feeble-minded persons get along fairly well in the community.

Our own experience has verified this; we have seen certain persons, undeniably feeble-minded, who were able to earn a living, to avoid serious social difficulties, and to adjust themselves fairly well to the conditions of normal living.

* Read before the National Conference on Social Work and the American Association for the Study of the Feeble-minded.

Furthermore, we have come to realize that the mere dubbing of an individual as feeble-minded does not furnish an adequate explanation for his criminal behavior.

We need to know more about those elements of personality that, on the one hand speak for successful adjustment, and on the other hand, just as surely speak for bad adjustment, if we are to undertake intelligently any well-planned scheme of procedure.

The problem would indeed be simple could we reduce it to the mere estimate—by means of mental tests—of an individual's degree of intelligence, and then his commitment in all cases to an institution.

But the adequate institutional care of all feeble-minded persons, even if desirable, is a long way off. No matter how we feel about it, the great majority of the feeble-minded are having to be handled out in the community.

Some are already a serious social menace; others give promise of becoming such; while still others will probably never give any difficulty, but being content and satisfied with their lot in life, will find some niche—however small—into which they can fit themselves, and scarcely create a ripple in the stream of life's activities.

It has seemed that a better understanding of the individual differences presented by feeble-minded personalities whose behavior varies so widely would be distinctly worth while. As a practical consideration, the whole question of the prevention of crime is intimately related to such an understanding of the predictabilities in any given case.

This study does not pretend in any sense to deal adequately with the situation; it does aim to call attention to certain other worth while considerations in the case of a feeble-minded delinquent in court.

For the purpose of this study the case records of 100 feeble-minded individuals were carefully gone over, with no other requirement for selection than that enough information bearing upon the career of each person should be at hand to determine the general character of her behavior—whether tending to conform to the social standards of the community or not; also that there should be enough information bearing upon each individual's personality to give a general picture of her abilities and disabilities.

These were all adult women, ranging in age from 17 years to 55 years—as the following table will show:

TABLE I.

SHOWING CHRONOLOGICAL AGE OF 100 FEEBLE-MINDED DELINQUENTS.

AGE	17-20	20-30	30-40	40-50	50	TOTALS
Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	
No. of cases	7	30	30	18	6	100
Per cent. . .	7%	30%	30%	18%	6%	100%

The greatest incidence is in the decade between 30 and 40 years, while more than two-thirds of our cases were between 20 and 40 years of age.

The mental level of these persons, as determined by means of the Yerkes-Bridges Point Scale and Goddard Revision of the Binet Scale is indicated in the following table:

TABLE II.

SHOWING MENTAL LEVEL OF 100 FEEBLE-MINDED DELINQUENTS.

MENTAL AGE	7-8	8-9	9-10	10-11	11-12	TOTALS
Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	Yrs.	
No. cases	1	11	42	26	20	100
Per cent. . .	1%	11%	42%	26%	20%	100%

To be sure, the diagnosis of feeble-mindedness in these cases did not rest alone upon the determination by means of a measuring scale of their degree of intelligence. In the first place, a thorough-going psychiatric study of each case was undertaken, in order to rule out the possibility of a psychosis or deterioration. In addition to the psychometric scales above referred to, Healy's supplementary tests were used; also tests of school knowledge and general information were given. From this and the history obtained, we came to our final diagnosis of feeble-mindedness.

As one read over these case histories, one was impressed with the marked differences in behavior manifested by these different individuals.

After leaving school, some secured employment, worked steadily and lived fairly quiet and sheltered lives; avoided alcohol, sexual irregularities, bad associates; appeared ambitious, were willing to accept authority, and to be guided by advice, were industrious, and seemed to have gotten into court more as a matter of chance than as a logical result of the life they had lived. In their reactions to the court's treatment, they profited by the mistakes they had made.

Others from the very start showed strong determiners for a criminal career. They either

would not work at all, or never remained at any place or form of work but a very short while; at an early age began to form vicious habits; established the very lowest companionships; became addicted to alcohol and drugs; were especially promiscuous sexually; seemed impervious to any advice and resistant to any form of authority; often arrested—as many as thirty-five to fifty times—they continue on repeating their offenses over and over, apparently unable to modify their conduct in keeping with the standards of the more normal living members of the community.

The following tables give only a very limited picture of the extreme maladjustment and abnormal behavior of some of these persons.

TABLE III.

SHOWING INDUSTRIAL EFFICIENCY OF 100 FEEBLE-MINDED DELINQUENTS.

INDUSTRIAL EFFICIENCY	STEADILY EMPLOYED	CHANGE OF WORK	DO NOT WORK AT HOME	HOUSE WORK AT HOME	TOTAL
No. of cases	16	38	35	11	100
Per cent.	16%	38%	35%	11%	100%

Sixteen per cent. were undoubtedly self-supporting; kept steadily employed and apparently gave satisfaction.

Thirty-eight per cent., while more or less self-supporting, changed positions frequently, worked irregularly, and did not give satisfaction where employed.

Thirty-five per cent. never worked at all; while 11% did housework at home.

The use of alcohol by feeble-minded persons affects seriously their general behavior in other regards. It seems as if such inhibitions as have been built up tending towards normal behavior are more quickly disorganized by alcohol, in the feeble-minded person than in the normal.

TABLE IV.

SHOWING PERCENTAGE OF INDIVIDUALS USING ALCOHOL AND DRUGS AMONG A GROUP OF 100 FEEBLE-MINDED DELINQUENTS.

Alcohol	82
Drugs	5
No evidence of either	18

Eighty-two per cent. used alcohol; 5% used drugs as well as alcohol; while 18% did not use either.

Almost invariably did one find that along with the use of alcohol, there also went sexual irregularities. In fact a close correlation seemed to exist, as the following table will indicate:

TABLE V.

SHOWING HABITS AS TO SEXUAL RELATIONS AMONG 100 FEEBLE-MINDED DELINQUENTS.

SEX RELATIONS	ABSENT	RESTRICTED TO MILDLY PROMISCUOUS	WAYWARD	SEXUALLY PROMISCUOUS	TOTAL
No. of cases	9	10	27	54	100
Per cent.	9%	10%	27%	54%	100%

In 9% sexual relations had been absent; in 10% all evidences seemed to indicate that they had been restricted to marriage; while 81% were either wayward or sexually promiscuous. In short, 19% might be considered moral, while 81% were undoubtedly immoral women.

The following table indicates the frequency with which these individuals came into court.

TABLE VI.

SHOWING FREQUENCY OF ARRESTS OF 100 FEEBLE-MINDED DELINQUENTS.

FREQUENCY OF OFFENSE	FIRST OFFENDERS	SECOND OFFENDERS	RECIDIVIST	TOTAL
No. of cases	20	12	68	100
Per cent.	20%	12%	68%	100%

Twenty per cent. of these cases were first offenders; 80% were repeaters. Among the recidivist group long records, such as 25 to 50 arrests, were common.

We divided these 100 cases into four groups—those whose behavior indicated good social adjustment (this should be taken in the very broadest sense); those whose behavior indicated fair social adjustment; those whose behavior indicated poor social adjustment; and finally those whose behavior indicated bad social adjustment. Our judgments were based upon the entire careers as pictured in the life histories, together with the court record.

The following table shows the character of behavior, and the general trend of the careers of these 100 cases:

TABLE VII.

SHOWING CHARACTER OF SOCIAL ADJUSTMENT OF 100 FEEBLE-MINDED DELINQUENTS.

Good social adjustment	4
Fair social adjustment	15
Poor social adjustment	52
Bad social adjustment	29

Total number of cases 100

Nineteen per cent. showed good or fair social adjustment (as said before, this must not be interpreted too literally—the fact that they were all feeble-minded and all court cases should be borne in mind).

Eighty-one per cent. showed poor or bad social adjustment.

Now, our purpose so far has been to show the perfectly obvious fact that though all of these

persons were feeble-minded, they still varied greatly in their mode of behavior and in their adaptation to the outside world.

Surely no one would be so unwise as to claim that within the constitutional makeup of these individuals could be found the sole explanation of their differences in behavior.

To overlook the importance of innumerable social and environmental factors as determiners for behavior would indeed be foolish. So complicated is the whole matter of conduct that it is difficult—if not impossible—to attach to each factor its proper value.

In this particular instance we hope merely to make clear a perfectly obvious relationship that exists between the traits of personality possessed by a feeble-minded individual and the character of his behavior.

The main divisions under which the various traits are arranged were borrowed from Wells: "The Systematic Observation of the Personality," etc.—"They are not intended to be rigid, nor could they be made so. . . No single characteristic can be absolutely separated from other characteristics, any more than a single act is the product of a single motive." There is, of course, much overlapping in these traits.

Something of the relationship that personality traits bear to conduct is exhibited in the following table:

TABLE VIII.

SHOWING RELATIONSHIP OF PERSONALITY TO CHARACTER OF BEHAVIOR.

	Good	Fair	Poor	Bad
Output of energy				
Active	4	14	20	12
Lazy	0	1	23	17
Good manual dexterity	4	12	7	4
Poor manual dexterity	0	3	45	25
Self-assertion				
Suggestible	3	11	26	9
Not suggestible	1	4	26	20
Ambitious	4	12	1	1
Not ambitious	0	3	51	28
Resists discouragement	2	7	22	12
Does not resist discouragement	2	8	30	17
Combative	0	0	32	20
Not combative	4	15	20	9
Habits of work				
Persevering	4	12	2	1
Capricious	0	3	50	28
Indolent	0	1	46	28
Industrious	4	14	6	1
Prompt	4	14	6	1
Procrastinating	0	1	46	28
Moral sphere				
Sincere	4	15	6	2
Insincere	0	0	46	27
Conscientious	4	13	7	2
Not conscientious	0	0	45	27
Honest	3	12	6	2
Dishonest	0	0	46	27

	Good	Fair	Poor	Bad
Truthful	4	12	6	2
Untruthful	0	3	46	27
Adaptability				
Coöperative	4	15	11	2
Not coöperative	0	0	41	27
Accepts authority	4	14	11	2
Does not accept authority	0	1	41	27
Guided by advice	4	14	0	0
Not guided by advice	0	1	52	29
Mood				
Emotional	2	8	42	14
Not emotional	2	7	10	15
Earnest	4	13	13	2
Frivolous	0	2	39	27
Anger easily aroused	2	3	42	20
Anger not easily aroused	2	11	10	9
Attitude towards self				
Self-pity	0	8	18	3
Self-justification	1	4	46	27
Attitude towards others				
Sympathetic	3	14	4	5
Not sympathetic	1	1	38	24
Fault-finding	0	1	31	13
Stubborn	0	0	41	27
Sullen	0	0	12	8
Sensitive	2	8	42	13
Not sensitive	2	7	10	16
Trustful	4	14	5	2
Suspicious	0	1	47	27
Selfish	0	5	47	27
Not selfish	3	10	5	2
Considerate	4	10	5	2
Inconsiderate	0	5	47	27
Appreciative	4	10	5	2
Not appreciative	0	5	47	27
Respectful	4	15	15	11
Attitude towards reality				
Acknowledges mistakes	4	15	6	2
Does not acknowledge mistakes	0	0	46	27

NOTE.—Nothing like a complete arrangement of traits is aimed at in the above table, inasmuch as our data as contained in histories were inadequate for such. For instance, under the heading "Attitude towards Reality," we have only two characteristics: "Acknowledged mistakes" and "Does not acknowledge mistakes."

On the basis of our four main headings, we find that those with good social adjustment (4%) showed good manual dexterity, were active, ambitious and not combative. In their work they were persevering and industrious; were usually sincere, conscientious, honest and truthful; were coöperative, accepted authority, and showed a willingness to be guided by advice; were earnest, kind and sympathetic, respectful, trustful, considerate of others, appreciative, acknowledged mistakes, and made an earnest attempt to profit by them. In some instances, these individuals were suggestible, sensitive, emotional and easily discouraged; but their principal difficulty was their arrested intelligence. All of these individuals worked steadily; none were alcoholic; none could have been considered immoral women; and none showed a tendency to a repetition of their offense.

Those with fair social adjustment showed the majority of the above characteristics, but with

less frequency than found in those with good adjustment; with a certain intermingling of undesirable characteristics—lack of ambition, indolence, untruthfulness, frivolity, capriciousness, self-pity, lack of appreciation.

The majority of these individuals were steadily employed, though some changed positions very often; nine of the fifteen cases had had illegitimate sexual relations, though none was sexually promiscuous. Seven of these cases used alcohol at irregular intervals. There had been no tendency in these cases to a repetition of arrest.

Those with poor adjustment showed a higher frequency of laziness, poor manual dexterity, lack of ambition, anger easily aroused, and combativeness. In their work they were more inclined to be indolent and procrastinating; showed a tendency to be dishonest and untruthful; were less agreeable to authority; were inclined to justify themselves and their acts; and showed little tendency to be guided by advice; were more often inconsiderate of others, stubborn, suspicious, lacking in appreciation, and rarely were willing to acknowledge their mistakes and make an honest effort to do better. None of these individuals was steadily employed; the majority changed positions frequently, not remaining long at any place, and in some instances did not work at all. Forty-nine out of 52 cases were alcoholic; and three were drug users. Forty-five out of 52 cases were either sexually wayward or especially promiscuous. Practically all of these persons showed a tendency to a repetition of their offenses—some to a great number of times.

Finally, those with bad social adjustment showed the above undesirable characteristics in a more marked degree and with greater frequency than exhibited by those with poor social adjustment. The majority never worked at all—gaining their living by simpler methods. All used either alcohol or drugs; 27 out of the 29 cases were immoral women; and all were repeated offenders, upon whom the court had tried every measure for proper readjustment at its disposal, and with no apparent success.

Looked at from another point of view, we find three main types of personality among these 100 cases. First, the feeble-minded person, in whom the intellectual defect is the outstanding factor, and little difficulties of personality are noticeable. This group was very small, and the possibilities for adjustment

seemed limited by their intellectual ability and industrial capacity; where these were of sufficient strength, outside supervision was successful.

Second, the unstable, emotional group, who, in addition to intellectual defect, suffer from a marked temperamental instability; are easily discouraged, go to pieces in emergencies, are very sensitive, quick-tempered, highly emotional, and lacking in inhibitions. This group was larger than the first, and presented greater difficulties in adjustment. Alcohol and sexual irregularities were found to be frequent. Something, however, can be done in the way of supervision in a few of these cases.

The third group presents very grave difficulties of personality; they are egoistic, selfish, inconsiderate of others, suspicious, indolent, unappreciative, unsympathetic, not cooperative; are unwilling to acknowledge mistakes; resist authority, and are not guided by advice. There is such an apparent shallowness in the moral feelings of these individuals that they exhibit no desire to do better, or to profit by their mistakes. Repeated arrests were the usual thing. Satisfactory supervision of these persons outside of an institution is impossible.

SUMMARY.

The object of this paper was to call attention to the value of certain facts other than the mere diagnosis of feeble-mindedness that are distinctly worth while in the consideration of the case of a feeble-minded delinquent in court.

For this purpose 100 cases were chosen, with no other requirement for selection than that enough information bearing upon the career of each person should be at hand to determine the general character of her behavior,—whether tending to conform to the social standards of the community or not; also that there should be enough information bearing upon each individual's personality to give a general picture of her abilities and disabilities.

These were all adult women, ranging in age from 17 to 55 years. The mental age of each of these persons was determined by means of the Yerkes-Bridges Point Scale and Goddard's Revision of the Binet Scale. The diagnosis of feeble-mindedness was arrived at by the usual methods—a psychiatric examination to eliminate psychoses, deterioration and such; a psychological examination, including the two scales above referred to, together with Healy's sup-

plementary tests, the application of tests for school knowledge and general information; and, finally, the gathering of a life history bearing upon the careers of these individuals.

As one read over these case histories one was impressed with the evidence of marked differences in behavior manifested by these different persons. Some had shown throughout life fairly good social adjustment (taking into consideration the fact that they were all feeble-minded). Others from the very start showed strong determiners for criminal careers, and manifested serious social maladjustment.

Sixteen per cent. were undoubtedly self-supporting, steadily employed, and apparently gave satisfaction where they worked. Thirty-eight per cent., while more or less self-supporting, changed positions frequently, and worked irregularly. Thirty-five per cent. never worked at all; while 11% did housework at home.

Eighteen per cent. never used alcohol or drugs; 82% used alcohol; 5% used drugs as well as alcohol.

Nineteen per cent. were moral, while 81% were undoubtedly immoral women.

Twenty per cent. were first offenders, 80% were repeaters.

In short, we have a group of about 19 individuals who were classed as having shown good or fair social adjustment, while about 81 individuals were considered to have shown poor or bad social adjustment.

The type of behavior manifested by these individuals seemed to correlate less with their age and mental level than with certain fundamental trends of personality.

Those with good or fair social adjustment possessed characteristics—personality traits—that, despite the existence of feeble-mindedness, enabled them to adapt themselves fairly well to the conditions of normal living.

Those with poor or bad social adjustment possessed personality traits that early gave promise of grave difficulties in behavior, and must inevitably have led to complete failure in adjustment.

We do not want to be understood as recommending the handling of feeble-minded girls out in the community; but we do want to call attention to the fact that some feeble-minded persons seem to get along fairly well under outside supervision, and do avoid serious social difficulties, and therefore are not necessarily—because they are feeble-minded—vicious, incor-

rigible and irresponsible. We do want to emphasize the fact that the majority, however, of feeble-minded delinquents seen in court are institutional cases, and are incapable of measuring up to the social standards of the community in which they live.

We want to emphasize strongly the fact that a well-rounded, thorough-going study of the possibilities of each individual delinquent, though he be feeble-minded, is necessary for an adequate adjustment of his case.

Clinical Department.

FRACTURE OF THE LONG BONES: A CLINICAL STUDY.*

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THE clinical deductions chronicled in this paper are gleaned from a case that in every aspect of bone surgery presented a very interesting picture. Before stating the record of events, it must be said, in justice to the surgeons who at different times exercised their skill in the hope of attaining a successful issue, that they were fully cognizant of the serious task which was confronting them.

On June 2, 1912, a female aged 24 years, in excellent health and splendid physical condition, was injured in a street-car collision. She was taken to the City Hospital. Examination at that institution disclosed a simple oblique fracture of the right femur about three inches below the great trochanter, and a compound fracture of the left tibia and fibula. The mandible at both angles was also fractured. Under the direct care of the visiting surgeon, the fracture of the right femur was reduced and the limb suspended in a Hodgen splint. This splint insured both traction and counter-traction. The fracture of the left tibia and fibula was reduced and the leg placed in a wire splint. Three weeks later the satisfactory progress of the wound permitted the application of a plaster-of-Paris cast to the left leg.

August 2, eight weeks after the accident, the Hodgen splint was discarded and a plaster-of-Paris cast substituted. August 9 the patient left the hospital and went home.

October 1, four months after the accident,

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the casts were removed from the right thigh and the left leg. Upon examination it was found that there was union neither of the femur nor of the tibia. The fibula was united. A consultation of two surgeons and an orthopedist was called. An open operation was decided upon. This was performed October 26, 1912. The operation consisted in refreshing the bone ends of the broken femur and securing apposition with silver wire. The wound became infected. This infective process extended over several months and severely taxed the health of the patient. The healing of the wounds left the bones ununited.

Another consultation with two different surgeons was called. After an examination, it was decided to break up the fibrous union that had taken place in the femoral fracture and place the limb in wooden splints, with extension. This was done March 8, 1913, in the patient's home. The splints were removed nine weeks later. No union.

May 19, 1913, at the Lutheran Hospital, a resection of femoral bone ends was undertaken, and the limbs immobilized in a plaster-of-Paris cast with strong abduction. Twelve weeks later no union had taken place. The patient was sent home. Consulting another surgeon, the patient was advised to go to Washington University Hospital. At this institution she was operated on October 13, 1913, sixteen months after receiving the injury. A graft from the right tibia was transplanted into the ununited left tibia. The leg was encased in a plaster-of-Paris cast. December 29, 1913 (ten weeks later) it was removed and union was found to have taken place. A cast was reapplied.

January 14, 1914, a graft from the right tibia was transplanted into the ununited right femur. The graft was of the inlay variety.

At the time of the operation no undue attempt was made to correct the deformity. The surgeon's sole aim was to excite an osteogenetic force sufficient to accomplish a bony union. This accomplished, it was reasoned that the correction of the deformity could be brought about by a subsequent operation. Inasmuch as the adductor group of muscles was very much contracted at the time of the operation, this was a logical procedure, as it would have been impossible, even with the best of fixation, to prevent a possible accident to the graft. This was clearly demonstrated to me in the subse-

quent course of the case. Furthermore, the surgeon, being alert to the defective osteogenetic power of the bone ends, decided not to force the limb into any absolute fixation, but simply to allow it to rest in a comfortable position so that no compression or constriction could exert any inhibitive influence on the callus formation. At times the contractions were sufficiently violent to endanger the graft. The patient begged for slight traction on her limb that the muscle spasms might be to some extent controlled. Traction of about ten pounds was applied. A certain amount of relief was thereby obtained.

When she left the hospital, on March 1, 1914, six weeks later, union with a deformity greater than the original had taken place. May 11, 1914, after being at home a little over nine weeks, she returned to the Washington University Hospital, where the cast from her left leg was removed. The union of the tibia was found firm, but there was a marked posterior bowing. The patient remained at the hospital seven weeks for after-treatment, and was then sent home.

September 1, the patient returned to the hospital for treatment for her stiffened knee and ankle joints and x-ray examinations. She remained three weeks. From Sept. 21, 1914, to July, 1915, the patient was at home. There she was subjected to massage and motion exercises in a most assiduous manner.

July 15, 1915, she returned to Washington University Hospital to have her knees and ankle joints, which were partly ankylosed, manipulated under anesthesia. She remained 15 days. From June 2, 1912, to July 15, 1915, the patient had been subjected to 15 ether, 5 gas-oxygen anesthetics. The time from August, 1915, to February, 1917, was spent by the patient at home, applying the various motion exercises she had learned while in the hospital and having her limbs massaged. She made every endeavor to learn to walk, but did not seem to be able to make any progress, and, as she expressed herself, her muscles absolutely refused to act right. She complained of much pain in her back, principally the lumbar region. The fracture sites, too, were at times very painful.

February 7, 1917, I was asked to interest myself in her behalf. The patient stated that measures which in the past were helpful had

now reached their limitations. She was unable to improve on her present state of walking and the future was beginning to grow dark for her. It was a request that could not be denied. The physical examination revealed the patient

good health. With this expression there was linked an asset, very essential to the sustenance of hope,—willingness and fortitude. When the patient was asked to walk, it was with the greatest effort that her lower extremities were



FIG. 1.—Angulation of right femur with firm union following inlay bone graft for ununited fracture. There is about $3\frac{1}{2}$ inches shortening. The valgoid condition of the right leg is the resultant weakening caused by excision of bone used as grafts for right femur and left leg.



FIG. 2.—Correction of angulation in right femur. Firm union.

in a fairly good condition. This was remarkable when the experience of the past four and a half years of her life was considered. From the want of proper exercise a general anemia was contracted, and this was very apparent. However, she expressed herself as feeling in



FIG. 3.—Backward bowing of left tibia, with firm union following inlay bone graft for ununited fracture.



FIG. 4.—Correction of backward bowing of left tibia. Firm union. An excision of 5 inches of the left femur was made to equalize it with its fellow and to relieve the pelvic obliquity and the lateral curvature of the spine.

placed in motion. The contortions of her body resembled those of a tabetic. A heel three inches in height was necessary on her right shoe, while her left leg had to be supported by a brace.

Examination of the right lower extremity re-

vealed a shortening of three and one-half inches, with marked inward rotation. The knee and ankle joints gave about one-fourth normal motion. In the hip joint motion was quite normal. A deformity in upper third of thigh, such as would result from angulation and outward bowing of the femur, was apparent. The amount of callus formation about the fracture site was very large. The union was firm. The group of adductor muscles was contracted. On the outer side of the thigh the skin was adherent to the bone, a marked depression interrupting the normal contour.

Examination of the left leg revealed an extensive bowing of the tibia backward. Callus formation over the site of fracture, which was in the middle third, was rather extensive. The union was firm. From the cicatrix in the middle third of the leg it was evident that there was much destruction of the soft tissues. The foot was in a drop position, with an extremely limited motion of the ankle joint. The knee joint gave about one-third normal motion. Motion of the hip joint was normal.

Examination of the pelvis elicited a marked obliquity, compensatory to the shortening of the right leg. The spine gave evidence of lateral curving to the left. The lumbar muscles on the left side of the spinal column were prominent.

Here was a terminal condition which, after a period of four and one-half years in a patient who had been subjected to the skill of very competent surgeons, proved most disappointing. Everything that was good and effective in both the closed and the open methods of treatment was employed and yet the end-results were poor.

The condition of the patient presented many problems, and it became a question with me to what extent they could be worked out. Why this patient did not have a primary union of the right femur must be explained upon the ground that after the broken bone ends had been brought in good alignment, the proper fixation of the fracture, through some cause or other, was not maintained. In the left tibial fracture, a septic process interfered with union. Later, when the right femur was subjected to the open method of treatment, it was also a septic process which prevented union. Seven months later, when the bone ends of the united femur were resected and no union re-

sulted, it must be inferred that the osteogenetic forces were defective or that the fixation of the limb was inefficient, permitting a material amount of movement to take place between the fragments sufficient to interfere with the process of consolidation.

The introduction of the bone graft clearly demonstrated that it was a direct assistance to osteogenesis, both the fractured femur and tibia giving evidence by promptly uniting.

The success of the bone graft lends an interesting chapter in this case. Almost two years after failure of union the introduction of an autogenous bone graft caused the bone cells to respond to the stresses to which the part was subjected. Consolidation took place. That the osteogenetic forces were weak and that the callus produced was not sufficiently strong in its consolidation to permit weight-bearing became apparent through the resulting deformity in both femur and tibia. It would appear that five months (femur) and seven months (tibia) might be sufficient time for the consolidation to support the body weight without disaster. There is no definite time when it can be said that a bone, whose continuity had been re-established through the stimulus of a bone graft, will be sufficiently strong to bear the body weight without dire consequences. It is fairly safe, however, to assume that a grafted bone will require at least three times as long for firm consolidation as a broken bone which has responded to primary union.

Having fully acquainted myself with the clinical manifestations presented in this case, a method of procedure was decided upon. From the skiagraph it became evident that the three and one-half inches shortening of the right femur was permanent, i.e., an attempt to lengthen the limb through operative means would be futile and that the correction of the angulation would not add materially to the length of the bone. To equalize the difference in the length of the limbs, it was decided to excise three inches of the left femur. With this procedure it was expected to restore to a certain extent the existing obliquity of the pelvis and to aid in the obliteration of the lateral lumbar curvature. Furthermore, it was expected that this procedure would more readily overcome the unequal strain that had been thrown upon the joints and ligaments through the faulty transmission of the body weight upon

the lower limbs. The correction of the right femur was brought about by removing with a chisel a wedge from the convex side of the angulated bone. This was made imperative because of the hard and extensive callus formation. The callus was found uniform in its density throughout. A piece of the graft, about one inch long by one-half inch in width, having the appearance and characteristics of a sequestrum, was removed. Before the femur could be brought in proper alignment, it became necessary to chisel through its entire thickness. Recalling the various pathological stages this bone had passed through and being fearful that a latent septic condition might be stimulated into activity, the bone and soft tissues were subjected to the least amount of traumatism possible. It is well to remember that organisms remain quiescent for a long time in a fracture which has united firmly and apparently normally after an infection, and that a subsequent trauma or the introduction of foreign matter, such as plates and screws, may stimulate them into active growth and so endanger a junction.

To guard against any displacement the bone ends were secured with a bronze wire. The wire was given preference over a Lane plate because of the fear of inciting a possible infection, and furthermore, because experience has proven that a plate can produce actual delay in efficient osseous union. Inasmuch as it could be assumed that in this extensive callus formation the osteogenetic force was deficient the contraindication to the plate became the more apparent.

Blood bathed the exposed bone freely. Closure was made without drainage. This was done under the assumption that the presence of blood about the traumatized bone might be of direct assistance to osteogenesis. Further to facilitate the bone production, the thigh was subjected to a congestive treatment—the so-called damming, originated by Thomas, which has served me well in several cases of delayed union. The limb was corded with a rubber tube applied above and below the fracture, sufficiently tight to produce considerable swelling and stasis for several hours a day. A Liston splint reaching to the axilla was applied to the extremity. The fixation seemed to be satisfactory. As long as the patient was under the influence of an anesthetic the group of ad-

ductor muscles, which prior to the anesthesia were markedly contracted, remained relaxed, and the splint did not betray its shortcomings. However, after the effect of the anesthetic had subsided the reflex contraction of the muscles manifested itself, disturbing the fracture and causing great pain. A Buck's extension was applied in the hope that gentle traction would overcome these muscle contractions. No difference, however, could be noted. Suspecting that the damming could excite or aggravate the spasms, it was discontinued. It was, however, found that cording of the thigh lessened their severity and the reapplication of the rubber tubing was resorted to for even a longer period of time.

After four weeks, during which time the patient received an opiate almost daily on account of the pain caused by the muscle spasms, it was decided to encase the limb in a plaster-of-Paris cast in the hope of getting more efficient support through a firmer fixation. The cast enveloped the lower part of the trunk and extended up to the thorax. It encased the whole extremity, including the foot.

The change seemed to be conducive of some good, and although the spasms did not subside entirely, they became less severe and of shorter duration, with longer intermissions. On account of atrophic changes in the limb, repeated applications of casts became necessary. Before a new cast was applied the limb was not encumbered with any form of splints for two days, excepting a sandbag support. During this time the whole extremity was bathed and massaged, and the articulations subjected to passive motion. It was interesting to note how quickly the limb changed from its blanched color to a livid one after the cast was removed, giving distinct expression of how restricted the blood supply must have been to the parts. Such a picture as this strengthens the belief that a plaster-of-Paris cast is not infrequently the cause of a delayed union, but may be a potent factor in non-union.

The application of a plaster-of-Paris cast to a broken bone must be a studied procedure. Its shortcomings must be well understood and its indiscriminate use should be discouraged. A plaster cast must not be applied to be constrictive or to compress the limb, but must be restrictive only, fitting closely to its actual somewhat increased circumference and forbid-

ding further increase of this circumference by muscular effort. At the end of three months the plaster cast was discontinued and a wooden support of posterior and lateral splints was substituted. The muscle spasms had not entirely ceased. At times they were very severe. However, the contractions became less frequent, their favorite time being in the morning, in the evening, or at midnight. During the first week in September, seven months after operation, a test of the limb revealed a firm union and all splints were discarded. Mild muscle spasms still supervened. The patient was not yet permitted to leave her bed.

The operative problem of the left femur presented difficulties entirely different from the right. To equalize its length with its fellow, an excision of three inches was to be made. Could this excision be made without interfering to an appreciable extent with the function of the limb? Would it be possible for the muscles to contract so as to have coördinative utility and be able to accommodate their sense to a degree that would insure an almost normal muscle balance? Taking into consideration that this patient was fully matured, these questions possessed a weighty import. Inasmuch as fractures of the femoral shaft resulting in two inches shortening terminated in satisfactory function, it was reasoned that an additional inch would not prove a serious menace. The excision was made at the time when the deformity in the right femur was corrected (February 19), and the site chosen was that presenting the best mechanical advantage. This seemed to be in the middle third immediately above the nutrient foramen. With a Gigli saw the excision was accomplished with ease. When the bone ends were approximated the muscle structure sagged about the bone in large masses. It was not a promising picture. To retain the bone ends in apposition and prevent a possible displacement, a graft taken from the excised bone was pushed into the medullary canal of the femur. A parting of the bone ends was anticipated by introducing a bronze wire through the upper and lower fragment. This bronze wire was tied in a knot as an ordinary piece of twine. At the conclusion of the operation everything appeared satisfactory and the limb was immobilized with a Liston splint. Four hours after the effects of the anesthetic had passed off, there occurred violent muscle con-

tractions. They were irregularly intermittent and shook the limb. It was necessary to administer an opiate to relieve both muscle spasms and the pain every 10 to 14 hours. On the fifth day after the operation a roentgen photograph revealed that the intramedullary plug was forced out, the wire had given way at the knot and was now an elongated loop and the bone ends had parted to the extent of about two and one-half inches. The damage which the violent muscle contractions had wrought was a great surprise; inasmuch as they were not abating in their severity, the only alternative was the application of a Lane plate.

After removing the wire and the intramedullary plug which was found lying outside of the medullary cavity, a heavy plate with six holes was placed without difficulty. The junction was found strong after four screws, two in the upper and two in the lower fragment, had been introduced; for this reason the remaining two screws were omitted. The limb was encased in a plaster-of-Paris cast in an abducted position. This cast, like the one on the right limb, included the foot and extended up to the thorax. To anticipate muscle spasms after the effects of the anesthetic had passed off, an opiate was administered. As long as this patient was under the influence of an opiate she was free from these painful contractions. Upon withdrawal of the drug the muscles, principally the adductor group, would contract in a violent manner, causing great pain and endangering the junction.

On the 18th day after the plate had been introduced the patient informed me that during the night the muscular contractions had been so violent that she feared the plate had been broken, as she distinctly heard a snap coming from that part of her leg. An x-ray picture taken immediately revealed the plate not broken but the screws in the upper portion forced. They could be plainly seen protruding above the plate. The alignment of the bone was only fair, the lower fragment having been drawn inward, causing a slight angulation at the junction.

The condition was disheartening. Again to open the wound and correct the existing deformity by reapplying the plate would have been a justifiable procedure. However, it was reasoned that the existing condition did not warrant it. Manipulation of the limb gave as-

surance that the plate was still fixing the bone ends quite securely. It was therefore decided to place both limbs upon a Rainey frame, and when the time came for removing the plate, then to make such corrections of the deformity as were deemed advisable.

June 18 the plate was removed, 114 days after it was introduced. The condition found was about the same as revealed by the x-ray picture taken at the time when the plate was supposed to have been broken. The screws in the upper fragment were out of their holes. The screws in the lower fragment were loose and could be removed with ease. Angulation of the bone was quite marked, the lower fragment having been pulled perceptibly inward. The Rainey frame undoubtedly was of great service in preventing a greater deformity. The behavior of this fracture clearly demonstrated to me how the non-union in the right femur resulted during the early measures that were instituted.

Although the position of the bone ends was fairly good, it was found that after nearly four months the callus was soft and no difficulty was experienced in readjusting the bone into the proper anatomical line. It is a rule in fractures that the worse the position of the bones the longer will the callus take to consolidate. In this case, however, although the apposition was not good, the limited amount and soft condition of the callus cannot be ascribed wholly to the poor apposition, but must be attributed to some extent to the anemic state of the patient. The limb was again encased in a plaster-of-Paris cast and placed in a Rainey frame. Muscular contraction became more mild, and only occasionally was there a marked exacerbation.

July 20, five months after operation, at 2.30 p.m., a muscular spasm of great severity was experienced which lasted three hours. This was the last of the severe contractions. An opiate was now only occasionally necessary. The inference could readily be made that this patient had become a habitué, having received almost daily doses for three months and tri-weekly doses for two months; however, it was with comparative ease that the discontinuance of the drug was effected. This was indeed remarkable. During the last two months of her stay in the hospital no opiates were administered. The muscular contractions continued for seven months, only during the last two

months were they so mild that no notice was taken of them. Antispastic remedies and quite a few mechanical measures to overcome these muscular spasms that so seriously threatened a good end-result did not influence the condition. Morphin was the only remedy that gave relief. It was hoped that the muscles would give up the struggle and acquiesce, as had been my experience in most cases of fracture where such contractions were severe enough to attract attention.

In this case, however, the phenomenon presented itself in such an unusual form that a central lesion was suspected. A neurologist, however, assured me that no such lesion was present. Inasmuch as temperature and pulse remained within a range that would preclude any pathological changes in or about the fracture during the process of consolidation, the persistency of these muscular spasms must be ascribed to an asthenic condition of the patient, inviting a neurological inanition, where a trauma so agitated the nerve centers that the coördinative powers of the muscular apparatus gave evidence of disconcerted action, and continued to do so until more favorable nutritive changes had taken place in the system. At no time did the temperature rise above 100° nor the pulse rate exceed 90, excepting on August 2, when the temperature registered 102° with a pulse rate of 118. The sudden change in the temperature and pulse picture was caused by an acute attack of appendicitis. The appendix was removed the following day. It showed evidence of marked thrombotic changes. Five days later the temperature and pulse were again within the normal range.

September 4, when the plaster encasement was removed from the left limb, muscle atrophy was marked. The contour of the thigh, however, was good and the firmness of the muscles presaged a good functional result. In this I was not disappointed as the patient is not experiencing the difficulty in walking that had been expected. The greatest hindrance to overcome now is the partly ankylosed condition of both knee and ankle joints. These articulations, although close attention was given them, suffered much during five years of confinement.

How nearly these articulations can be restored to their normal action is problematic. At present it is a serious handicap to the patient's

walking exercises. Too much stress cannot be placed upon the care of the articulations in fracture of the long bones. It does not matter much whether the fracture is in the immediate vicinity of the joint or not. The neglect of extending the needed attention to a joint of a limb that has been immobilized is almost a surgical sin. No matter how serious the bone injury there is always an opportunity at some time when the proper consideration given a joint, may avert much that is aggravating and frequently very troublesome. Especially is this true in fractures involving the long bones of the lower extremities.

The remaining deformity that necessitated correction was the bowing backward of the left tibia. The amount of callus about the middle third of the tibia, the site of the fracture, was abundant. Consolidation was strong. It will be remembered this was a compound fracture, the infective process covering nearly three months. A non-union resulted. This ununited fracture was subsequently stimulated into union with the assistance of a bone graft taken from the right tibia. The deformity was undoubtedly caused by too early weight-bearing, when the callus was the seat of active changes and consolidation was far from complete.

In correcting this deformity, which was undertaken the same time the right and the left femur were operated on, an oblique osteotomy was done through the callus between the original fragments of the shaft. The tibia was not severed in its entirety, enough of the bone being kept intact to act as a splint for fixation to prevent any overriding and subsequent shortening. After the chisel had penetrated the tibia to about four-fifths of its thickness the lower fragment was forced backward, the action being similar to the correction of a green-stick fracture, until the posterior bowing had been overcome. The result of this manipulation left a gap about an inch wide upon the anterior aspect of the tibia. This gap was allowed to fill with blood and the skin closed over it. No trace of the bone graft was found. With posterior and lateral splints, the leg was securely fixed and bandaged to the Liston splint, which was used to immobilize the thigh. Subsequently, when the Liston splint had to be changed on account of the muscular contractions, the entire extremity was encased in a plaster-of-Paris cast.

The anatomical line of the tibial shaft remained as it was placed at the time of operation and a good consolidation resulted at the end of three months.

This patient is at present able to stand erect and is making satisfactory progress in walking. Muscle fatigue and joint pains necessitate that the exercises be of short duration.

The long confinement caused ligamentous relaxation in nearly all the large joints of her body. This was exemplified in the frequent subluxations of her shoulder joints by some trivial movement.

In summarizing it may be said that the dominant facts in this case were:

The successful bone grafting 16 and 19 months, respectively, after the fractures had been incurred.

The successful bone grafting following a septic process.

The successful bone grafting after non-union following resection of the bone ends.

Excision of three inches from the femoral shaft, without causing any apparent damage to the mechanics of the thigh muscles.

The violent and long-continued (seven weeks) muscular contractions.

Failure to anticipate these muscular contractions.

Failure to judge the violence of these contractions.

Failure to secure properly the bone ends of the left femur after excision.

Failure to immobilize properly the extremities from the start.

The successful moulding of the callus of the left femur four months after excision.

The length of time it required for the consolidation of the callus to permit weight-bearing.

The promptness with which the patient was able to discontinue the morphin.

Book Reviews.

Pharmaceutical Botany. By HEBER W. YOUNGKEN, Ph.G., A.M., M.S., Ph.D. Second Edition. Philadelphia: P. Blakiston's Son & Co. 1918.

This book deals with the pharmaceutical aspect of botany. It is divided into two parts: the first is devoted to the morphology and physiology of Angiosperms; it gives the history of

the male fern, coordinates the resemblances and differences between Gymnosperms and Angiosperms, and describes vegetable cytology, plant tissues, organs, and organisms. A treatise is given on cell formation and reproduction, including indirect nuclear division, and non-protoplasmic cell contents. It considers, also, woods, root tubercles, the gross structure and histologic differences between monocotyl and dicotyl leaves, the histology of floral parts, and the histology of types of fruits and seeds. Part two deals with the taxonomy of plants, mainly but not wholly of medicinal value, together with the parts used and the names of the official and non-official drugs obtained from these.

The Clinical Pathology of the Blood of Domesticated Animals. By SAMUEL BURNETT, A.B., M.S., D.V.M. Second Edition. New York: The MacMillan Company. 1917.

This book is a text-book of hematology for the use of students and practitioners of veterinary medicine. It furnishes data concerning the blood of the kinds of experimental animals commonly used. In this edition, what is considered to be normal for each species is stated, and tables are given summarizing the results obtained by different investigations. The book considers methods of examination, the morphology of the formed elements, the normal blood of domesticated animals, variations in red corpuscles and hemoglobin, and influences affecting the leucocytes. Various diseases are described—special diseases of the blood, general and infectious diseases, infectious diseases due to bacteria, fungi, and protozoa, and diseases due to animal parasites. In the examination of these diseases, physical and histological, rather than chemical methods, are employed. In interpreting the results of an examination, the blood should not supplant other means of examination, but may be considered an important symptom.

CHEMISTRY OF FOOD AND NUTRITION. By HENRY C. SHERMAN, Ph.D. Second Edition. New York: The MacMillan Company. 1918.

This volume presents the general principles of the chemistry of food and nutrition, the food requirements of man, and a consideration of the nutritive values of various foods. The book has been published primarily to meet the needs of college classes, but it may be of interest to all who are interested in the scientific aspect of food as a health factor. Although the book is not technical in nature, it contains a number of original investigations and a discussion of several controverted views. The chief functions of food—to yield energy, to build

tissue, and to regulate body processes—and the reactions which depend upon the chemical composition and constitution of the food are described. The metabolism of matter and of energy and the importance of food as a fuel requirement are explained. Carbohydrates, fats, proteins, vitamins, fat soluble A, and water soluble B are considered as nutritive properties and as factors of food value in the problem connected with the economic use of food.

Obstetric and Gynecologic Nursing. By EDWARD P. DAVIS, A.M., M.D., F.A.C.S. Fifth Edition. Philadelphia and London: W. B. Saunders Company. 1917.

The fifth edition of "Obstetric and Gynecologic Nursing" has been enlarged and revised, making the volume even more valuable than previous editions. Part 1 deals with obstetric nursing, the caring of the mother during pregnancy, parturition, and the puerperal state, and also with the care of the child. It considers conditions of both natural and abnormal pregnancy and describes methods of treatment in cases of accidents and diseases. Part 2 deals with gynecological nursing. It considers methods of examining patients, the general care of patients, local treatment, gynecologic operations, care during convalescence, vaginal celiotomy, cancer, mental diseases complicating pelvic disorders, and venereal disease. In the appendix there is included a dietary and instructions for the preparation of surgical supplies. This is a book of unusual interest and value to trained nurses.

Reclaiming the Maimed. By R. TAIT McKENZIE, M.D. New York: The MacMillan Company. 1918.

"Reclaiming the Maimed" is a practical handbook of physical therapy. The therapeutic agents which are useful in restoring to normal the functions which have been impaired by wounds include electricity, radiant heat, hot and cold water, massage, passive movement, muscular reëducation, and gymnastic exercises. Methods of applying these agents are considered. Twenty appliances for the reëducation of weakened muscles and stiff joints, which have been adopted by the Military Hospitals Commission of Canada, are described. The importance of occupational therapy from the physical, vocational, and moral standpoint is considered. One chapter is devoted to masking facial deformity. The book contains many illustrations and gives an interesting and valuable account of the means which have been potent in restoring to military service and future industrial usefulness men who have been disabled in active service.

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ALCOHOL IN PEACE AND WAR.

It seems probable that prohibition of all liquor, including beer and light wines, will soon be enforced by an act of Congress. It may be proper, therefore, to inquire what the effect is likely to be, that is to say, the effect on the nation's health and vitality. The public discussion of this question has too often been concerned with politics and prejudice, which have led many people far astray in their judgment of the past history of alcohol. It has always been far too easy to generalize on the custom of taking some form of spirits as a habit which affected the health and morals. Only gradually are we learning how imperfect our knowledge can be.

For very special reasons it is desirable that physicians should be very cautious in prescribing alcohol or in recommending its use as a beverage. This postulate will be admitted by

nearly all medical men, and yet it will be found that they are by no means agreed as to the physiological effects of the drug. Another point upon which they differ is the comparative effect of drinking wines and spirits. Are distilled spirits more injurious than the fermented? Has the human race acquired a certain tolerance of alcohol? If so, would it not be wiser to wait for the gradual extinction of the craving? Laws cannot control taste and inclination, but a natural or acquired antipathy can. There are many reasons to think that the consumption of spirits is declining through the action of an antipathy which, by a well-known law of human nature, follows centuries of over-indulgence.

Before the war there was a strong movement in all countries to promote the temperate use of alcohol. More exact physiological investigations were made and the results were generally accepted by physicians. Alcohol ceased to be regarded as a stimulant, a valuable medicine, being recognized in its true character as a narcotic with toxic properties and some nutritive value. But nothing is sharper than the contrast between theory and practice, and hence it was not uncommon for physicians to prescribe it in cases where a stimulant was needed. Its effects on work and efficiency were also found to be injurious. Yet students of the problems of alcohol and skilled movements, of alcohol and industrial fatigue, have sometimes failed to reconcile the results of physiological experiment with their observations of the actual conditions of labor.

One reason is that it is impossible to make a dogmatic assertion about alcohol without finding it necessary to make an immediate qualification. Alcohol, for example, is generally narcotic in its effect, but, if this be the invariable effect, how is it that alcohol braces the nerves in emergencies? The explanation is thus given in the admirable book, "Alcohol: Its Action on the Human Organism," which is the joint work of experts in physiology. "There are emergencies when, though the individual may also imagine that he needs to be braced up nervously, he would in fact be assisted far more by a relaxation than by an increase of tension, and here the sedative action of alcohol, so far as its immediate effect is concerned, may be advantageous." The writers state further that the value of the rum ration may be explained in this way.

In this opinion it ought to be noted that no definition of the term "narcotic" is given; apparently the committee of British experts of whom Lord D'Abernon is chairman, took it for granted that no definition was needed. As they are all familiar with the work of Overton and Meyer, and must have read the definition of narcotics lately given by the Cours de cassation in France—that they are "stupefying drugs" or "stupefants"—it seems strange that a preliminary difficulty was not disposed of at the outset.

The question again concerning the food value of alcohol is one that is most difficult to determine. For it is said that alcohol has very little food value. Yet we read: "Alcohol is a fuel food which is available only for immediate use. Alcohol can, within limits, replace an equivalent amount of carbohydrate or fat in a diet, and has a similar effect in economizing protein." The word "equivalent" is ambiguous. And how can it be said that a food is only "available for immediate use" when it can replace an equivalent amount of carbohydrate and fat? In what sense is alcohol equivalent to fat and sugar?

Of all problems alcohol most urgently requires the axiomatic definitions of a science like geometry. In the preface to "Alcohol; Its Action on the Human Organism," Lord D'Abernon has supplied a remarkable series of terms. They are not unlike the definitions ascribed to Pascal in the Port Royal Logic, inasmuch as they show the exact limits of our knowledge. They are put in the form of questions for the sake of clearness:

1. "In what way, and to what extent, if at all, do solutions of ethyl alcohol in water, as commonly used in laboratory experiments, differ in their action on the nervous system from ordinary alcoholic beverages of corresponding strength?

2. "Are there any differences in inebriating action, and if so what differences, between the several sorts of alcoholic liquors when taken in doses of equivalent alcoholic strength? Does the drunkenness caused by wine or beer differ in character from that caused by spirits?

3. "Is the effect on the nervous system of a given dose of alcohol modified when it is administered in a combination of alcoholic liquors? Does mixing drinks tend to produce drunkenness?

4. "Does the greater or less degree of dilution in which it is administered modify the immediate action of a given dose of alcohol on the nervous system? If so, why and how?

5. "In what respect and through what mode of influence, if at all, is the action of alcohol affected by its administration with food? To what extent does its action vary with the particular foods taken, *e.g.*, fats and sugar? Will a given dose of alcohol have a greater or lesser effect on nervous functions when taken with a meal than when taken on an empty stomach? If there is any difference, is it due to a difference in the rate of absorption, or is it to be explained otherwise, and if so, how?

6. "Does the presence of fatigue modify the effect of alcohol on the performance of skilled movements?

7. "How does climate affect the amount of alcohol that can be taken without injury to health? Is alcohol less injurious in moist climates than in dry climates?

8. "To what extent is the development of chronic alcoholism dependent on disease of the stomach brought about by the directly injurious action of the alcoholic beverages?

9. "Does the feeling of increased cheerfulness induced by alcohol favor the resistance of the body to adverse physical influences, such as cold?

"To none of these questions is it now possible to obtain a precise and authoritative answer. Yet it is of vital importance that knowledge of the points involved should be full and accurate."

In the unsettled state of these questions the British authorities have reached the conclusion that conditions of life evolved in response to the needs of a nation in war cannot be controlled by a group of reasoners whose views are fashioned upon entirely different principles. The result is clearly stated by Dr. Arthur Shadwell, after a personal inspection of workers. The effective measures of liquor control are the curtailment of hours, the prohibition of treating, and the dilution of spirits. In practice they have led to a marked diminution of intemperance.

In this country there is a different custom of taking alcoholic drinks, which has an important relation to questions of health and food conservation. There are patent medicines

which require an immense amount of alcohol for their manufacture. Yet these drugs are not controlled at all. There are also foods which are preserved in alcohol and which are consumed by many persons who think them harmless and nutritious. These medicines are fruitful causes of intemperance and even dipsomania. It certainly seems possible to banish the evils of strong drink in some way that does not leave so many traps and pitfalls as illicit drinking. A federal law may be extremely beneficial, but previous experience and the analogy of other countries where it has been tried do not inspire confidence. So far it has not been a means of suppressing alcoholism and many other evils of drink. The effects of secret indulgence in drink are far more pernicious than such control of hours and public refreshment as prevails in England.

FOLLOWING UP TUBERCULOUS SOLDIERS.

At the beginning of the war the necessity of eliminating tuberculosis from the Army as completely as possible was recognized by the Surgeon-General to be a most important duty. Accordingly, he procured the services of the foremost tuberculosis authorities in the country to deal with the problem. Specialists in tuberculosis and internists of known ability have been commissioned to serve as experts in the camps and cantonments. Under them are the Tuberculosis Reviewing Boards, each composed of from eight to twelve physicians who have had special training in the diagnosis of tuberculosis. Most of these men are commissioned officers of the Medical Reserve Corps. Each base hospital has a well-equipped x-ray laboratory with a competent man in charge.

In a general way the procedure in dealing with tuberculosis at the camps is as follows:

Recruits upon arrival at camp are examined rapidly by regimental surgeons. Cases that present evidence of disease of the chest are referred to the tuberculosis expert, who determines whether the disturbance is tuberculous or not. If tubercular, the man is recommended to the Physical Disability Board for immediate discharge. The Tuberculosis Reviewing Board keeps watch over the camp itself, each man

being examined by it in turn. Doubtful cases are sent to the base hospital for observation. Not every man who is found to have been infected by tubercle bacilli is discharged from the service.

An important distinction is to be made between the terms "contracted in the line of duty" and "not contracted in the line of duty," for the status of the soldiers as to governmental responsibility for care and compensation by the Bureau of War Risk Insurance is affected.

General Gorgas has laid down the following rule to determine whether or not pulmonary tuberculosis has been contracted in the line of duty.

"A case of chronic tuberculosis in which the length of service is three months or less shall be considered to be not in the line of duty; cases of acute tuberculosis shall be considered to be in line of duty in all cases irrespective of length of service. When distinction between acute and chronic forms is not possible, cases of three months' or longer service shall be considered to be in the line of duty; those of less than three months' service shall be considered to be not in line of duty unless it be shown that the patient has had some disease since enlistment, such as measles, which may be expected to reactivate tuberculosis, or unless there is a history of excessive fatigue or exposure in line of duty calculated to break down the resistance of the individual."

The Government does not hold itself responsible for the care of drafted men who have chronic tuberculosis if the service is less than three months. They are given either transportation to their homes or a sum of money equal to three and a half cents per mile for the distance from camp to home. The Bureau of War Risk Insurance is inclined to pay compensation to soldiers found to be tuberculous if the disease is caused by active service, whether reactivated or newly contracted.

Those for whom the War Department assumes responsibility will be sent to government hospitals. At present five of these are planned: one at Otisville, N. Y., one at Azalea, N. C., one at Merkleton, Pa., one at Whipple Barracks, Prescott, Ariz., and one at Denver, while one is now established at Fort Bayard, N. M. A new 150-bed sanatorium at New

Haven, Conn., has been taken over by the War Department. The War Department is much opposed to the policy of placing the men in small units in local sanatoria, owing to desire to make the treatment standard throughout for the purpose of compiling statistics, and to keep the men contented. If they are placed in sanatoria situated near their home they will give too much thought to family problems, which will retard them in recovery.

Those men discharged from the camps because of tuberculosis and "not in line of duty" will number, according to estimates of the Surgeon-General, about 1% of the drafted Army. Many hundreds of these were previously unknown cases. Much interest and desire to help these unfortunates returned from camp is manifested by the various anti-tuberculosis associations throughout the country. By courtesy of the Surgeon-General the names and addresses of those discharged are being furnished to the National Association for the Study and Prevention of Tuberculosis, and this is forwarding them to the appropriate state boards of health and anti-tuberculosis associations, and civilian relief directors. There is necessity for coöperation between these three agencies, for the danger of antagonizing the men by too promiscuous approach, and so frustrating any efforts for their welfare, is great.

The National Association is urging a plan of coöperation. The first agency that should get in touch with these cases should be the Board or Department of Health, either State or local. These authorities are entrusted with the responsibility for the control of tuberculosis, and theirs is the primary responsibility to the individual and the community.

The function of the anti-tuberculosis society, in relation to the cases should be to see that each individual is properly followed up and that the interests of the men as well as of the community are safeguarded. It should visit and direct the individual case only when assistance is required by the health authorities. The Home Service Sections of the Red Cross, to whom this information will be transmitted by the Divisional Directors, should be prepared to supplement the efforts of the other organizations when called upon by them to act. Where relief is shown to be necessary, the Red Cross will administer it in accordance with ap-

proved standards, as provided by the Director-General of Civilian Relief. In other words, the method of approach should be in this sequence: first, Board of Health; second, Anti-Tuberculosis Society; third, Red Cross.

CHICAGO MEDICAL SOCIETY AND COMPULSORY HEALTH INSURANCE.

THE Chicago Medical Society has recently presented the following arguments in opposition to compulsory health insurance:

Health insurance, it avers, is not working out satisfactorily either in Germany or England, where it is now in force. In spite of statements to the contrary, statistics prove that it does not increase longevity. At the present time the white male expectation of life at age of 30 in the United States is 34.87 years, against 34.55 years in Germany. At the age of 70, when the reasonable effects of progress in industrial conditions and public health should be most perceptible, the white male expectancy of life in the United States without social insurance is 8.83 years, against 7.90 years in Germany, notwithstanding many years of compulsory health insurance experience.

According to Prof. Ludwig Bernhard, professor of economy, University of Berlin, many diseases or disorders have sprung up since the advent of social insurance, such as pension hysteria, pension neurasthenia, and pension hypochondria. All of these are now quite frequently met with in German medical practice.

Certain of the insured are no longer as much interested as formerly in the quickest possible recovery, since by malingering frequently the health benefits may be increased.

Compulsory health insurance does not decrease poverty, because the employer, in order to keep his assessments low, will choose his employees carefully, selecting only the healthy and excluding the others by medical examination, and, therefore, there will be a strong tendency to the formation of a large permanent pauper class. Under all schemes for compulsory health insurance as yet proposed, the persons most needing the insurance will not get it,—those who are out of work except on account of illness, longer than the extension of one week for each four weeks during the pre-

vious twenty-six weeks of paid-up assessments, those who are unable to get into the voluntary insurance societies because they are unable to pass the medical examination, those who are not insured because they are unable to get work on account of their age, alcoholism, shiftlessness, general incompetency, or any other disabling condition which prevents them from being employed.

Quoting from Samuel Gompers:

"This fundamental fact stands out paramount,—that social insurance cannot remove or prevent poverty. It does not get at the cause of social injustice. Social insurance in its various phases of sickness insurance, unemployment insurance, death benefits, etc., only provides the means for tiding over an emergency. The labor movement aims at constructive results, higher wages, which means better living for the workers and those dependent upon them; better homes, better clothing, better food, better opportunities, etc., which means relief from over-fatigue, time for recuperation, workers with better physical development and with sustained producing powers. Better physical development is in itself an insurance against illness and a degree of unemployment."

Although it is true that from a wrong sense of national pride medical men in Germany may publicly deny that compulsory health insurance has hindered medical progress in Germany, it has been privately indicated that such insurance is interfering seriously with medical progress. It is a noteworthy and conspicuous fact that in the past twenty years only one therapeutic discovery of the first magnitude has come out of Germany, and that discovery was made by a chemist and not by a practising physician. The German Sickness Societies during their thirty years of existence have so interfered with the income of physicians that now only a few of the financially able or those where prospective marriages could bring them a competency are able to take up the study of medicine, consequently this automatically bars out the naturally fit from the general practice of medicine. This leads to fewer physicians of class, which consequently overburdens others with work. The average "Kranken Klasse" physician, making calls for an average of about 20 cents per call, in order to make his income sufficient to meet living expenses, must make many calls, forcing him to neglect to continue

his education, and in this way deteriorating the service to the great mass of people so that they probably receive the poorest class of medical service in the world. England will be in the same condition in a short time, and, in fact, now the insured are complaining of the service they are getting under the Social Insurance Act.

Attempting to get something for nothing or much for little always pauperizes people, and this is just exactly what compulsory health insurance encourages. Everyone familiar with the workings of the Compulsory Health Insurance of Germany and England who does not hold a sinecure under the system will substantiate the statement that patients run to the doctor for every little ailment just because the service is not charged to them personally.

The system has been tried in Illinois, and investigation has shown that of the money supposedly expended for aid of those insured, 58.5% of the total was disbursed for rent, salaries, and expenses of those administering the system.

CARE OF THE DISABLED SOLDIER IN ENGLAND.

A RECENT publication by the Red Cross Institute for Crippled and Disabled Men, in No. 7 of Series 1, of a pamphlet entitled, "The Development in England of a State System for the Care of the Disabled Soldier," shows England's methods of dealing with her disabled men. The problem of rehabilitating the men who are physically incapacitated so that they may again become capable of productivity, is enormous. The nation's industrial machinery has been carefully analyzed, and much careful thought has been given to the task of fitting into it her disabled soldiers and sailors.

The traditional system of pensions, supplemented by the aid given by philanthropic societies, is deemed inadequate in dealing with a problem of such large proportions as this present war will produce. Instead of relapsing into a condition of absolute dependence upon pensions, and a consequent state of personal unhappiness and national uselessness, the present system aims to substitute the teaching of trades in such a way as to make disabled men self-

supporting. As pensions will not be decreased with increased earning capacity, there is an added incentive toward taking advantage of the training which is offered. The State recognizes its obligation to assist her men on their way back to civil and industrial life. Early in the stage of recovery, the opportunity for beginning a course of training is given. This course is urged, and the support of a man's family during the period of training, and the expense of his training, is paid by the State.

When a man is discharged from military service and returns to his home, the Local Committees, the Ministry of Pensions, and Trade Advisory Committees stand ready to assist him in reestablishing himself in industry. Training is given in engineering and ship-building trades, printing, furniture making, leather goods, boot and shoe manufacture, jewelry, brush making and dental mechanics.

England has one hundred and fifty trade schools. Joint committees assist local committees in surveying the educational facilities which the schools within their bounds offer. The course ordinarily takes six months; it is short and intensive, and designed to fit an adult in as brief a time as possible to become a wage-earner. Besides a training in vocational schools, training often may be given directly in workshops, with the prospect of securing permanent employment at a fair wage in the same shop. It is difficult to determine upon an equitable basis the wages to be paid to men under 100% capacity. Advisory Wage Boards have been organized to deal with this problem.

After a man has received his training, there is the further problem of placing him in industry. Usually, if he has received training in a shop, he is given permanent employment in that shop. Those who have received training in trade schools are urged not to enter munition factories for the sake of high temporary wages, but to seek employment in some industry which will not be so greatly curtailed after the war. Although employers are now activated by patriotic motives and conscientiously attempt to give preference to disabled soldiers and sailors, it is possible that the economic stress after the war may force the nation's gratitude to a position of secondary importance. For this reason, in view of the keen competition which is likely to ensue when normal conditions return, men are strongly advised to take

advantage of the training offered, in order that they may become skilled workers in some industry, with a chance of a definite wage in the future.

A further benefit to both men and employers lies in the manner in which the problem of Health Insurance has been treated. Disabled men are entitled to the full benefits of the Insurance Act. They are insured at the same rate as normal workers; therefore, as the liability of employers is not increased, there results, in consequence, less hesitancy in employing disabled men.

England has replaced the "*laissez faire*" policy by an avowal of her responsibility to assist men disabled in her service in reestablishing themselves in civil and industrial life. The system is in keeping with her democratic institutions, and compatible with her national unity and coördination.

PHYSICAL EXAMINATION AS A CIVIL SERVICE INSTRUMENT.

As leading article in this issue of the JOURNAL is published an address delivered by Dr. Andrew F. Downing before the annual convention of The Assembly of Civil Service Commissions at Milwaukee, Wisconsin, on June 21, 1918. It is an essay on government in which the author has expressed to a body of laymen the philosophy of a medical function to a governmental activity which is interested in securing good government by practical means. It is highly desirable that the medical profession should get its due share of credit for its contribution to the forwarding of any public service work. There are over 250 Civil Service Commissions in this country, most of which are of comparatively recent origin. The Massachusetts Commission goes back to 1884, and it frequently receives requests for information concerning physical standards from physicians who are doing this work for other Commissions. Dr. Downing's admirably written article contributes something of this information to medical literature, and should be read with attention and interest by physicians, whether or not engaged in this branch of medical activity.

MEDICAL NOTES.

THE RECENT SMALLPOX OUTBREAK IN GERMANY.—The following account of the recent smallpox outbreak in Germany has lately been published in the *Lancet*.

"The occurrence of epidemic smallpox in Germany is a rare event, for hitherto the majority of the population have been well protected by primary vaccination in early life and revaccination at school age, the males who undergo military training having a second revaccination on being called to the colors. A large proportion of the cases of smallpox reported in Germany have generally been foreigners temporarily resident in that country. The war has brought about certain changes in the constitution of the population of some localities by the addition of large bodies of prisoners of war and of a considerable number of people deported from the occupied territories in Belgium, France, and Russia, who are engaged in forced labor under unhygienic conditions, and many of these persons have never been vaccinated. In the latter part of 1916 a prevalence of smallpox began in Germany, the main facts of which may thus be briefly outlined.

The infection was introduced from Russia by prisoners of war. Some of the earlier cases occurred at Hamburg, Lünenburg (in the province of Hanover, Münster (Westphalia), and Rathenow (Brandenburg), 43 miles from Berlin. From these and other centers smallpox spread over Prussia, Bavaria, Saxony, Baden, and other states of the empire. So far as can be ascertained, 524 cases were reported during 1916, and in 1917, up to September, about 4000, the case mortality rate being about 10%. Thus, in the 12 months ended September 30, 1917, about 4524 cases of smallpox were notified in Germany. Comparing these figures with those of the previous 20 years, we find that the largest numbers recorded in any year were 434 cases and 65 deaths in 1908, a considerable proportion of them being foreigners. Professor Kirchner, of Berlin, who holds an official post in the Ministry of the Interior, has lately in a public speech referred to the recent smallpox outbreak in Germany and the lessons to be derived therefrom. He pointed out that of 1000 cases specially investigated 150 occurred in persons under the age of 30, and 850 in those over 30 years of age. Of the latter group, 40 were in the age-group 30 to 40 years, 73 were aged from 40 to 50, 236 were from 50 to 60, no fewer than 332 from 60 to 70, and 169 over 70 and up to 92 years of age. The mortality was similarly highest in the later years of life, the exact opposite of what occurred in pre-vaccination days.

As yet there is no information published as to the number of smallpox cases and deaths among the prisoners of war and the deported

people. Presumably a proportion of those attacked were Germans, and it may be assumed that these were persons past middle age whose vaccination and revaccination, performed in early life, had ceased by lapse of time to protect them. Professor Kirchner is evidently of this opinion, for he urged everyone over 35 years of age who had not been recently protected to submit voluntarily to revaccination to restore his lost immunity. He also urged the compulsory vaccination of tramps, beggars, and other wandering folk, as these had often been proved to act as carriers of the infection from place to place. There is recent evidence to hand that smallpox has still been recurring during the present year in Germany, though not to the same extent as in 1917. Cases have been notified from such widely separated districts as Posen, Oppeln, and Breslau in the east, and Düsseldorf, Duisburg, Münster and Essen in the west. The presence of the disease has also been reported in some of the large towns, including Berlin, Potsdam, Dresden, and Stuttgart. The *Times* has lately published reports regarding the occurrence of 'black smallpox' among the employees at Krupp's works at Essen, where prisoners of war, deported people, and workers from neutral countries, along with Germans, are employed in large numbers under unfavorable sanitary conditions. The German authorities, as might be expected, have tried to minimize the gravity of the prevalence of the disease at Essen and elsewhere. The smallpox season may be regarded as having passed for the present, but a recrudescence of the disease is not at all unlikely in the autumn and winter. England has so long been free from epidemics of smallpox that many people have lost the dread of the disease and have consequently neglected vaccination, especially since the Act of 1907, which gave facilities for obtaining exemption certificates to those who had no genuine 'conscientious objection,' but who merely wished to avoid a temporary inconvenience to themselves. There is, in our opinion, a considerable danger of smallpox being imported into this country from abroad at the present time, and in view of the large number of unvaccinated children now existing in England, the chances of a serious epidemic cannot be ignored if the disease once succeeded in gaining a footing in the country. In the circumstances it would be imprudent to postpone vaccination and revaccination till the danger has seriously developed."

WAR NOTES.

BOSTON PHYSICIAN WOUNDED.—Major Daniel F. Maguire, who has recently been wounded while on service in France, was born in this city October 21, 1882. He was graduated from the Boston Latin School in 1899, and from

Harvard Medical School in 1906. After two years as house officer at the City Hospital, he was sent to the new East Boston Relief Hospital where he was largely influential in making that hospital an institution of excellent service. He resigned from the hospital service Nov. 1, 1909, to become a first lieutenant in the Medical Corps.

ETHER EXPLOSION AT ARMY PLANT.—In St. Louis, two girls and a fireman were probably fatally injured and 230,000 quarter-pound cans of ether for the American Army in France were destroyed when a fire, followed by many explosions, did \$125,000 damage to the Mallinckrodt Chemical Works. After an investigation, officers of the company said the fire was caused by a spark from an electric soldering iron.

DR. GRIEUMARD APPOINTED CAPTAIN.—Dr. George A. Griemard, of Fitchburg, has been appointed a captain in the Medical Reserve Corps, and has been ordered to active service to Camp Greenleaf, Fort Oglethorpe, Georgia.

SOUTH BOSTON DENTIST CITED FOR BRAVERY.—Dr. Patrick I. Kelley has been cited for bravery in leading a party of men out into No Man's Land. Dr. Kelley is a top sergeant in the 103d Ambulance Company, 101st United States Infantry.

DR. BAYNE IS A GERMAN PRISONER.—Dr. H. Breckinridge Bayne, a Washington physician, believed dead since last September, is safe in a German prison camp. A letter dated March 15, bearing a Bucharest postmark, has been received. Dr. Bayne was serving with the British Red Cross last September, when the Germans invaded Rumania. The hospital staff fled, but he remained behind to attend the wounded and was taken a prisoner.

AMERICAN HOSPITAL BEGUN AT SOUTHAMPTON, ENGLAND.—Work has been begun on the largest American military hospital in Great Britain. It will be located near Southampton, and will accommodate 3000 wounded Americans from the west front.

The site is a magnificent country estate of nearly 200 acres, which the Red Cross has purchased. The old manor house will be the central building of the new hospital and around it

the Red Cross is building nearly 10 acres of hutments and wards.

The central corridor of the new hospital will be 1000 feet long, opening on either side into wards, each one of which will accommodate from 60 to 100 patients.

The site is one of the most beautiful in Southern England. It overlooks Southampton Harbor and the Isle of Wight, and has a frontage of half a mile on the water, with good fishing and boating facilities.

The property includes a great amount of woodland, where American lumbermen are already felling trees to provide heavy timber for the new buildings.

The contracts provide for opening the hospital with the first 400 beds in six weeks. The institution will have its own electric plant, water supply, kitchen gardens, dairy, chickens and pigs. The construction is going on under the supervision of Capt. Harper Sibley, ex-president of the Chamber of Commerce of Rochester, N. Y.

COLLEGES ASKED TO HELP THE ARMY.—Major-General Gorgas has announced that the Medical Department of the Army, through the National Research Council, will soon issue an appeal to American colleges and universities urging them to alter their curricula so that third and fourth year students may receive special training which will enable them to qualify as officers and for other work in the Medical Department.

The appeal will be sent to all the principal colleges and universities in the country, but as it is realized that important institutions may not, for various reasons, receive the appeal, the request is made by Dr. Gorgas that all directing heads of such institutions write either to Dr. Richard M. Pearce, of the National Research Council in Washington, or to the Division of Laboratories in the Office of the Surgeon-General, for details of the proposed plan.

General Gorgas is reported to have said:

"These colleges will render valuable assistance to the department by offering these special courses to their students, who will enter the Army when they become of age, or in the event that they volunteer before that time. The students desired are those who are taking various scientific courses. The course proposed by the Medical Department should appeal to men who are specializing in biology, plant

pathology and in industrial and agricultural bacteriology.

"In a number of institutions the necessary course can be arranged by a simple modification of the already existing course in bacteriology with added emphasis on special subjects of value to the Army.

"As to completing such courses, arrangements for enlistment can be made through the Surgeon-General's office, if the applicant is under draft age, and if of draft age, he can be inducted into the service and assigned where his special training will be of value.

"This plan has already been tested in two colleges and the success attained has led the Medical Department to apply it to as many colleges as possible. From one such institution every man taking the modified course was admitted directly into the Army and went to one of the training schools where a portion of the men will later qualify for commissions in the sanitary corps. Others have qualified for positions at field or mobile laboratory units and as assistants in base and evacuation hospitals."

LIEUTENANT DAVIES HONORED.—Lieut. M. R. Davies, of the United States Army Medical Reserve, who is serving with the British Army, has been awarded the Distinguished Service Cross, one of the four new American decorations, for bravery.

On January 8 he entered a dugout, under continuous shell fire, and remained there attending the occupants after it had been blown in. He performed an amputation operation and saved the life of a British soldier. He received the first medal conferred on any American serving with the British forces.

SEVEN TONS OF SURGICAL DRESSINGS SENT TO EVACUATION HOSPITALS.—The American Red Cross recently sent seven tons of surgical dressings and five tons of special diet foods to the principal evacuation hospitals of the American Army. The Red Cross Medical officers, storehouses and pharmacy will operate night and day during the drive of the French and Americans.

The chief of the medical section arrived from the front on July 19, and started back the next morning with a load of emergency supplies, including 50 gallons of alcohol, 2000 dozens of tetanus anti-toxin, surgical instruments, several gross surgical needles, dressings of all kinds and materials necessary in the operating rooms.

Three hundred and fifty beds, with American doctors and nurses, have been added to the

American Red Cross hospitals at St. Pol for use during the present offensive. The tent hospital outside of Paris has added 300 beds.

POSTHUMOUS AWARD OF WAR CROSS TO PHYSICIAN.—Dr. George P. Howe, who was killed in action in Flanders, September 28, 1917, has been awarded, posthumously, the distinguished service cross for extraordinary heroism.

Dr. Howe was a first lieutenant in the American Medical Officers' Reserve Corps and was assigned for service with the British Army. At the time of his death in Tower Hamlets, Flanders, he was attached to the Royal Fusiliers, a famous British regiment, as a battalion medical officer. He was one of the first American officers killed in action. General Pershing says:

"His was one of the spirits that bring pride to our own hearts and confidence to the hearts of our allies."

ELKS' PLEDGE WAR HOSPITAL.—A second reconstruction hospital for men in the service has been pledged to the Government by the Order of Elks. The structure, one of the largest of its kind in the world, is to cost \$350,000 and will be erected at New Orleans. A few weeks ago the Order laid the cornerstone for a \$250,000 reconstruction hospital at Boston.

2000 NURSES NEEDED FROM MASSACHUSETTS.—Just as the young men of the country have responded to the need of their country, so, too, must the young women. The men have not hesitated to leave their business and high positions of trust to answer the call of duty. From the Surgeon-General of the Army comes a similar call to the young women of the land to go into training camps no less important than those at which their brothers are preparing for overseas service—the training school for nurses.

Already the Red Cross has withdrawn graduate nurses by the thousands for service "over seas." It is estimated that the army will require 25,000 by January 1, 1919. This deficiency must be made up by filling the training schools to their utmost capacity, that civilians may be cared for and the standard of health of the country be maintained. Massachusetts must register 2000 before August 11, 1918.

To accomplish this Washington is enlisting a Student Nurse Reserve of 25,000 young women between the ages of 19 and 35, of sound health and well educated, who shall hold themselves in readiness until April 1, 1919, to be assigned to training schools as vacancies occur. So great is the need, an intensive drive is being carried on from July 29 to August 11, by the Woman's Committee, Council of National Defense, in coöperation with the Red Cross, to enlist this reserve.

The student nurse will receive board, lodging and tuition free and, in many cases, a small remuneration for incidentals. The course covers from two to three years, according to previous training. After graduation the nurse can command from \$100 to \$300 a month.

No war service is more vital or more satisfying than that of the nurse who stands side by side with the fighting forces in the first line of combat, and out of the fearful waste and havoc of war helps to save numberless precious lives. She helps to protect our men from the scourge of disease, often more deadly than bullets. She mitigates the suffering and horror of war hospitals and helps to keep alive the faltering courage and spirit of wounded men.

But this is not all. Back of the fighting line there is another army, needing the services of the nurses, the industrial workers, the food producers, and others as essential to the successful outcome of the war as the soldiers and sailors. All these, as well as the children, must be cared for if the nation is to be preserved intact and ready to lead in the great reconstruction after the war.

Only graduate nurses can meet the tremendous emergencies abroad, but here at home there is plenty of service which the student can render to keep up the standard of health of the nation. In so doing she is just as truly serving her country as is her Red Cross sister over the sea.

It is, therefore, a solemn duty on the part of young women—one that cannot be taken lightly—to abandon lives of selfish, self-centred pleasure and enlist in this nursing service, than which there is no greater.

Enrolment cards may be obtained at local nurses' training schools or from Miss Helen Wood, Massachusetts General Hospital, director of the central recruiting station for Massachusetts.

ANTHRAX AMONG SOLDIERS.—At Camp Merritt, N. J., eleven soldiers are ill with anthrax, or wool sorter's disease, due, it is believed, to the use of cheap shaving brushes. In this connection, it is interesting to note the following review of the English experience, published in the United States Public Health Report for June 12, 1918:

"Among civilians in England, 19 cases are included from June, 1915, to October, 1916, 14 of which were proved to have originated from infected shaving brushes, the evidence being that a new brush was used in each case just before the malignant pustule appeared, and that virulent anthrax was found not merely on the patient's brush (in each case the patient might have infected it), but on similar brushes obtained from the same shops or wholesalers. The other five cases were suspected of having originated in the same way, though evidence was not conclusive.

"Among the English troops in France, 28 cases of anthrax occurred from 1915 to February, 1917, but although the site in 23 of them was in the shaving area, and it was known that some of the infected lots of brushes were distributed to troops, proof of infection in this manner is lacking.

"From the beginning of the war up to February, 1917, 18 infections with anthrax occurred among the troops in England, at least 12 of these being on the shaving area, and 4 almost certainly being due to shaving brushes.

"Of the 33 cases with known outcome, 21 died, a mortality of 64 per cent. In this connection it may be remarked that except in endemic locations, such as tannery districts, many mild cases probably recover without diagnosis, the case mortality appearing higher on that account.

"One reason for the high mortality may lie in the site, infections of the neck being more serious than those elsewhere on the body. In one case the pustule developed within 24 hours of an accidental razor cut on the first day of using the infected brush. In another case the infected brush was used only once and the pustule developed about six days later. Two of the patients had fatal anthrax meningitis without any local lesions other than the apparently noninfected razor cut. Meningitis due to the anthrax bacillus has been reported from Holland and England, and one of the recent American cases has been of this type.

"Fifteen of the civilian cases were due to 12 different types of brush, but six of these types were from one manufacturer, the hair used coming from different lots. It is disconcerting to learn that some of the infected brushes were made from hair which had presumably been disinfected in accordance with requirements. Six other manufacturers were implicated, at least

two of them being New York firms and one an Osaka firm. Four of the fatal cases were due to New York brushes. The brushes had gone through the hands of various wholesalers, retailers, and brokers, and much credit is due those who traced the origin of the infection in spite of the lack of method in storing and dealing with these cheap brushes in commerce. In the very heavily infected Japanese lot about 75 per cent. of a shipment of 43,200 were traced and destroyed; an indication of the low human susceptibility to anthrax is found in the fact that only one case is known to have originated from the remaining 10,000, though all samples of this lot examined were infected. The horsehair from China and Siberia seemed to be principally involved, especially the gray or yellowish hair and imitation badger hair; some of the dirty, infected Chinese hair had been incorrectly invoiced as 'goat's hair.' Hog bristles, which are stiffer, seem to be free from anthrax, though much of this material comes from Siberia. Previous experience with occupational anthrax had made English and German manufacturers wary of Russian, Siberian, or Chinese horsehair, but the great demand for brushes and the interference with usual trade channels for the raw material led to a letting down of the bars on the part of the older manufacturers, and carelessness on the part of the new manufacturers who knew little of the danger of horsehair. Black or thoroughly dyed hair seems to have been disinfected satisfactorily, but there is a tendency to avoid high temperatures in the disinfection of the white hair and of that colored to imitate badger hair. The thorough and repeated washing in hot, soapy water which a shaving brush receives in use appears to rid it of the dangerous infection mechanically, since most of the cases occurred soon after the new brush was used, and in two brushes which had caused anthrax the free portion of the hair showed no infection, while anthrax bacilli were found on the ends of the hair embedded in the handle; in the corresponding unused brushes, the anthrax bacilli were found on the free portion of the hair."

DOCTORS IN CLASS ONE CALLED.—All physicians and surgeons in Massachusetts who are in the draft age and are in Class One, and have not already volunteered into the Army or Navy Medical Reserve, have been ordered into military service. The registrants are to be inducted on August 11 and are to report at Fort Slocum, New York, where they will be given special training. The men are to be inducted regardless of whether they are physically fit for general or special service.

MEDICAL MEN NEEDED FOR INDUSTRIAL CASES AT HOME.—The importance of maintaining the

industrial health of the nation must not be overlooked. If ever there was a time when much attention should be paid to the care of the men and women working in our factories and shops, it is now. Not only is labor scarce, but medical men to look after the sick and injured are growing fewer and fewer. By the time we have 5,000,000 men in France practically 40,000 of our physicians will have been enrolled in the service. It has been estimated that in the United States there are 145,000 men and women licensed to practice medicine. Of these, more than 81,000 are members of the American Medical Association. Probably one-third of all the best members of the profession will soon be engaged in war work. The other two-thirds must do all the work at home.

It is just as important to keep our men, who are working on supplies for the Army, in good health as it is to keep our soldiers so. As a matter of fact, it is more important, because our soldiers, unless they are well fed and well clothed and have plenty of ammunition, cannot be kept well or fight well. It must be remembered that it is just as important to get an injured man back to his work as quickly as possible as it is to get a wounded soldier back into the ranks. The Surgeon-General of the United States recognizes the situation and is loth to accept any man who is devoting the greater part of his time to the care of industrial cases. One must be careful how he applies the term "slacker" to the man who remains at home, for the health of the workers at home must be maintained, and able medical men are needed for these industrial cases.

COMMISSIONS IN MEDICAL RESERVE CORPS.—The following commissions in the Medical Reserve Corps have been announced:

Captains. W. G. Turner, Fall River; A. C. Dedrick, Fall River; F. A. Webster, Boston; G. H. Grant, Boston; H. W. Nowell, Boston; Warren Joel Howard, Waitefield, Vt.

First Lieutenants. H. A. Courtemanche, Lynn; H. V. Hyde, Boston; R. C. Jones, Fitchburg; A. M. O'Connor, Housatonic; E. T. Saeger, Brookline; T. F. Wheeldon, Boston; Edwin Pakenham Ruggles, Dorchester; Manfred E. Simmons, Boston; Edward O. Tabor, Lowell; J. M. Gilchrist, Springfield; N.

Holden, Springfield; W. T. Jones, South Hamilton; G. H. McClelland, Springfield; H. W. Beck, Boston; M. J. Holmes, Cambridge; G. A. Feleh, Boston; G. Ljungberg, Worcester; R. E. Merritt, Wollaston; R. H. Morris, Everett; E. H. Wiswall, Wellesley.

First Lieutenants. C. E. Allard, Dorchester; S. B. Annis, Natick; H. F. Dearborn, Lawrence; M. L. Alling, Lowell; J. E. Burnette, Brockton; C. T. Cobb, Northampton; N. M. Cooney, Northampton; J. J. Curtin, Waltham; H. J. Falvey, Worcester; J. L. Mara, Brockton; F. Hincheliffe, Cohasset; D. M. Marofsky, Camp Devens; N. B. McWilliams, Williamstown; S. C. Eveleth, Marblehead; J. J. Paglia, Worcester; W. M. St. Georges, Holyoke; W. L. Wright, Boston; G. C. Anthony, Wellesley; G. L. Bunnell, Foxboro; H. A. Callahan, Jamaica Plain; F. H. Coffin, Haverhill; D. F. Coleman, Wellesley; M. A. Gilbert, Chelsea; L. W. Harris, Cliftondale; T. J. Norton, Pittsfield; Patrick H. Kettredge, Portsmouth, N. H.; John H. Woodruff, Barre, Vt.; Willard L. Wright, Boston.

First Lieutenants (dental). N. H. Tracy, Boston; J. Smith, Cambridge; H. E. Nash, Westboro.

SPANISH GRIP AMONG SWISS TROOPS—There have been 305 deaths in the Swiss Army from Spanish grip. The number of civilian deaths has not been published. The hospitals are overcrowded and there is a great shortage of doctors and nurses.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending July 27, 1918, the number of deaths reported was 221, against 188 last year, with a rate of 14.69 against 12.69 last year. There were 54 deaths under one year of age, against 28 last year.

The number of cases of principal reportable diseases were: diphtheria, 45; scarlet fever, 4; measles, 48; whooping cough, 50; typhoid fever, 1; tuberculosis, 46.

Included in the above were the following cases of non-residents: diphtheria, 13; measles, 1; tuberculosis 2.

Total deaths from these diseases were: diphtheria, 4; measles, 4; whooping cough, 6; typhoid fever, 1; tuberculosis, 18.

Included in the above were the following non-residents: diphtheria, 2; measles, 1; whooping cough, 1; tuberculosis, 1.

RECOVERY OF INFANTILE PARALYSIS VICTIMS.—The Executive Committee of the Instructive District Nursing Association, in a report for the first six months of the year, announces a marked number of complete recoveries from the after-effects of the infantile paralysis epidemic of 1916. The improvement and recovery of patients has reduced the number of visits by district nurses from 1937 during the first six months of 1917 to 719 for the first six months of 1918.

The 105 nurses of the Association staff made 111,348 visits during the first six months of this year, 5404 of which were pre-natal visits. New patients registered totaled 11,214, of which 1946 were new-born babies.

CRANE SANATORIUM.—A recent statement of the National Tuberculosis Association to the people of the country emphasized that there were more than 1,000,000 tuberculous persons in the United States, and that there was an imperative need for more tuberculosis hospitals. A paragraph from that statement reads as follows:

"As something more than 1,000,000 persons are suffering from this disease in the United States, and as the previous shortage in accommodations has been rendered more acute by the problem of providing proper care for men rejected in the draft and discharged from the Army on account of tuberculosis, any ban at this time on new buildings of proper character would be extremely serious."

The Crane Sanatorium, which is in process of erection at Rutland, Mass., is being completed as fast as funds permit, and represents the only effort being made in New England to increase sanatorium accommodations. Contributions are much needed at this time in order that the building may progress as rapidly as possible during the summer months.

PHYSICIANS NEEDED FOR BABY HYGIENE ASSOCIATION.—With more and more men going into service, the difficulty in keeping our home institutions adequately manned is becoming acute. The Baby Hygiene Association, which in the past has depended almost entirely upon recent medical graduates to conduct its well-baby clinics, finds itself seriously handicapped by this shortage of physicians. This condition of affairs is especially unfortunate, since war conditions make child conservation all the more imperative. To those physicians who are obliged to remain at home the Association of

fers the opportunity of doing very vital war work by taking charge of well-baby clinics. Men who would be willing to give a part of one afternoon each week are asked to communicate with the Director, Dr. J. Herbert Young, 296 Boylston Street.

Correspondence.

DIRECTORY FOR WET NURSES.

Boston, July 24, 1918.

Mr. Editor:

I am writing this letter in the hope that its publication in your JOURNAL, if you see fit to publish it, will once more call the attention of the physicians of Massachusetts to the existence of the Directory for Wet Nurses at 63 Binney Street. This institution is prepared to furnish wet nurses or drawn breast milk at any time. It guarantees that the nurses are healthy and that their milk is of good quality, but gives no guarantees as to their characters, habits and dispositions.

The Committee of Ladies in charge of the Directory for Wet Nurses, feeling that they were perhaps not meeting the demands of the public as well as they might, have recently adopted a new schedule of charges. This schedule is as follows:

When the wet nurse lives in the patient's family, \$15.00 per week. The wet nurse's baby accompanies her and is to be fed on the bottle, unless the nurse has milk enough for both babies.

If the wet nurse remains at the Directory and her milk is drawn for the patient, the patient getting all of her milk, the charge is \$30.00 per week.

Drawn breast milk is for sale at 25 cents an ounce. The maximum charge for the milk for a single baby is, however, \$4.00 per day, even if it takes more than 16 ounces per day. The explanation for the slightly higher charge for breast milk when the wet nurse remains at the Directory is that in this instance the patient gets all the milk from one woman, while in the other instance the patient gets the mixed breast milk of several or many women.

These charges may at the first glance seem rather large. They are calculated, however, just to cover the expense of running the Directory. They will not cover the expense of running the Directory, however, unless the wet nurses of the Directory are used freely by the public, because the overhead charges remain the same whether few or many nurses are in the Directory.

Suitable reductions in the charges given above will be made for people unable to pay these prices, if, in the judgment of the Committee in charge of the Directory, they are justified.

The wet nurses, who are in the Directory waiting for cases, are paid a reasonable sum per week. Only a part of their milk is given to their own babies; the rest of it is drawn and given to various Boston hospitals that care for sick infants.

Whether the Directory for Wet Nurses will be able to continue the work which it has undertaken depends on the support which it receives from physicians and the public.

The Committee in charge of the Directory for Wet Nurses is anxious to give the best possible service to physicians and to the public. If the service rendered is not satisfactory, complaints sent to Mrs. F. Lothrop Ames, 306 Dartmouth Street, Boston, will be given due attention.

Yours sincerely,

JOHN LOVETT MORSE.

RECRUITING OF STUDENT NURSES.

Washington, D.C., July 3, 1918.

Mr. Editor:

1. This is to inform you that a nation-wide campaign to recruit 25,000 student nurses, both for the Army School of Nursing and for all accredited training schools connected with civilian hospitals is to be launched on July 29th.

2. It will be conducted under the direction of the Woman's Committee of the Council of National Defense upon the request of the Committee on Nursing, General Medical Board. It will be strongly supported by the cooperation of the Surgeon General's Office, the American Red Cross and of the General Medical Board and State Councils Section of the Council.

3. It is designed to be a direct appeal from lay women to the young womanhood of America to enter upon a course of nurse training. The appeal will be made on the basis that every day of a student nurse's training represents a double patriotic service in that while she is preparing for military duty later, she releases a graduate for military duty now and herself cares for the civilian population.

4. The Committee on Nursing and the Woman's Committee join me in urging the medical profession through our State and local committees to encourage the families of their patrons to respond to this call; and also to lend their hearty cooperation during the recruiting days. It is especially desirable to use this opportunity to point out the fact that the maintenance of local hospitals and the training schools connected with them is an imperative community obligation.

FRANKLIN MARTIN.

Member the Advisory Commission.

RECENT DEATHS.

DR. ALBERT HERDER died recently at his home in Arlington, Mass. Dr. Herder came to this country from Germany, where he was born 48 years ago.

DR. WILLIAM J. MCGUEN died in Boston, of diabetes, March 19, 1918, aged 49 years. He was a graduate of the Tufts College Medical School in the class of 1904, and was a Fellow of the Massachusetts Medical Society. He is survived by his widow.

DR. JAMES HENRY STUART died recently at his home in Brighton, Massachusetts. He was a graduate of the New York University Medical College, class of 1880, a member of the Massachusetts Medical Society and the Alumni Association of the New York University Medical College.

DR. GEORGE LUND TAFT died recently at his home in Cambridge, Massachusetts. Dr. Taft had practiced dentistry in Cambridge for many years. He was born in Boston October 19, 1859. He was graduated from Boston University in 1884, and from 1885 to 1890 was an instructor in the Western New York Institute for Deaf Mutes. He returned to Boston in 1891 and took a course at the Harvard Dental School, from which he graduated in 1894.

DR. E. W. SANFORD, of the Johns Hopkins Medical School, died recently in Centerville from blood poisoning, produced by accidental inoculation while engaged in research work for the government. When he found that symptoms of poisoning were developing in himself as he had observed them in experiments on guinea pigs and pigeons, he informed his parents and prepared for death. While ill a letter of praise for his work came to Dr. Sanford from Dean J. W. Williams of the medical school.

Dr. Sanford was 25 years of age and a graduate of Yale.